Chester H. C. Rudbery

ART AND INDUSTRY IN EDUCATION

THE ARTS AND CRAFTS CLUB
TEACHERS COLLEGE
COLUMBIA UNIVERSITY

Charcoal Drawing, Grace Cornell

ART and INDUSTRY in EDUCATION

A book illustrative of the principles and problems of the courses in Fine and Industrial Arts at Teachers College 1913

Published by the Arts and Crafts Club of Teachers College, Columbia University in the city of New York

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by
Raymond Long, Pres.
for
Arts and Crafts Club.

PREFATORY NOTE

We are very highly gratified to realize that there was sufficient demand for the first publication of "Art and Industry in Education" to warrant a second edition. This assurance of a demand for the magazine has made possible another publication this year, which has been compiled, similar in spirit to the initial number.

It should be borne in mind, that while we have been able to publish only one number each year, the magazine is not to be confused with a year book, for it is our definite intention that when the work of compilation becomes better organized, it shall become a more frequent publication.

Subject to the sponsorship of Professor Dow and Professor Bonser, heads of the departments of Fine Art and Industrial Art, we have attempted to make the magazine illustrative of principles and problems now being worked out in these departments at Teachers College.

We very sincerely trust that some of the possibilities of good correlation have been illustrated in this book, with sufficient clearness to be of assistance to supervisors and instructors in the Fine and Industrial Arts.

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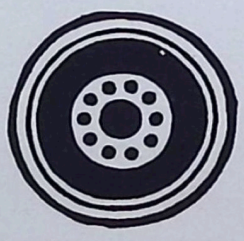

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Charcoal Drawing — Senior Class.

APPRECIATION

We are indebted for many kindnesses to Dr. Frederick Henry Sykes, Director of Practical Arts at Teachers College, and President-elect of the Woman's College of New London, Conn. In his many years at Teachers College he has given us much in inspiration and example. We have enjoyed without stint the breadth of his interest, the wisdom of his advice, and his keen appreciation of the possibilities of beauty in the serviceable elements of life. Therefore, before his departure for this new post, we take this opportunity of thanking our friend Dr. Sykes, an artist, a thinker, and a man of affairs.

There are none of the present class in Fine Arts and few of our recent alumni who have not, as students, been associated with Miss Mary Bull Hanckel of Teachers College and Miss Lila Nourse of the Horace Mann School, and before they leave for further study abroad we wish to express our appreciation of all we have received from them, of their sympathy, their helpfulness, and their splendid ideal of work.

THE GOSPEL OF ART

Work thou for pleasure;
paint or sing or carve
The thing thou lovest,
though the body starve.
Who works for glory
misses oft the goal;
Who works for money
coins his very soul;
Work for the work's sake
then, and it may be
That these things shall
be added unto thee.

Kenyon Cox

INDUSTRIAL ARTS EDUCATION AT THE DRESDEN CONGRESS

Ethelwyn C. Bradish

The subject of greatest interest to me at the Dresden Congress was the extent to which the industrial arts work was included in the general elementary school in the foreign countries. In only a few instances in the general elementary schools did I see traces of a development of industrial design in connection with other subjects in the curriculum. In one place nature study was closely connected. A great many drawings of flowers, plants, and insects had been made. From these, designs were developed and used on different articles, such as textiles, pottery, wall-paper, book-covers, and end-papers for books. Designs were also worked out from geometric figures. This method, with which you have all been so long familiar, of developing design through nature motifs, seemed to me to be much less strong than that of using principles of space cutting where carefully chosen spaces are filled with tone and color. In the latter there is unlimited freedom as to motif and all kinds of design may be evolved. In Germany, France, Italy and Holland, there seem to be two systems of education, general and industrial. The minimum amount of elementary school training precedes the liberal and technical which nearly always are developed in separate institutions. England, I believe, is an exception in this respect; at least the two are more united there.

One thing of particular significance was, that in almost every exhibit of industrial work which I saw, projects were taken up which involved only the industrial problems of that particular community, rather than ones which emphasize industrial needs and

activities of present day world-conditions, whether they be in that especial locality or not. For example, in Switzerland, designs for damask and all sorts of woven linens prevailed; in Belgium, lace designs. An interesting project in the Hamburg elementary exhibit was a small theater made of wood with burlap curtains and cardboard figures, the scenery being of cut-paper and offering a splendid opportunity for originality in design. There were also some very interesting designs for gardens worked out in cut-paper. In Professor Czick's exhibit from Vienna which represents the work of a private school where there is unlimited freedom of expression, there were some quaint costumes designed in connection with different periods in history. These ranged from about the fourth to the fifth grades. Designs carried out in woolen work helped to complete this vigorous exhibit. Technical excellence was one of the distinguishing features of all the industrial arts work of the foreign schools, showing that vocational work is one of the chief ends in this education rather than a general education for appreciation of industrial problems.

Of course our ideals, social conditions, and industrial situations are fundamentally different from those of Europe, which make our problems of education different; so the two exhibits could not be judged from the same view-point. I felt that we were doing more for the elementary children than they by giving them an appreciation of good design in industrial art. The European schools evidently rely upon their higher technical schools to do what is necessary to develop that side of the child's education. They have every opportunity to study fine design in industry with their splendid Industrial Arts Museums. Dresden is especially fortunate in this respect. The Industrial exhibit from the Bavarian Provinces which we saw in Munich showed the fine work which is done in German industrial, technical and trade schools. Is it any wonder that we are tempted to buy the foreign products, where an excellence in design and workmanship so clearly show the influence of the fine training which the workers have had?

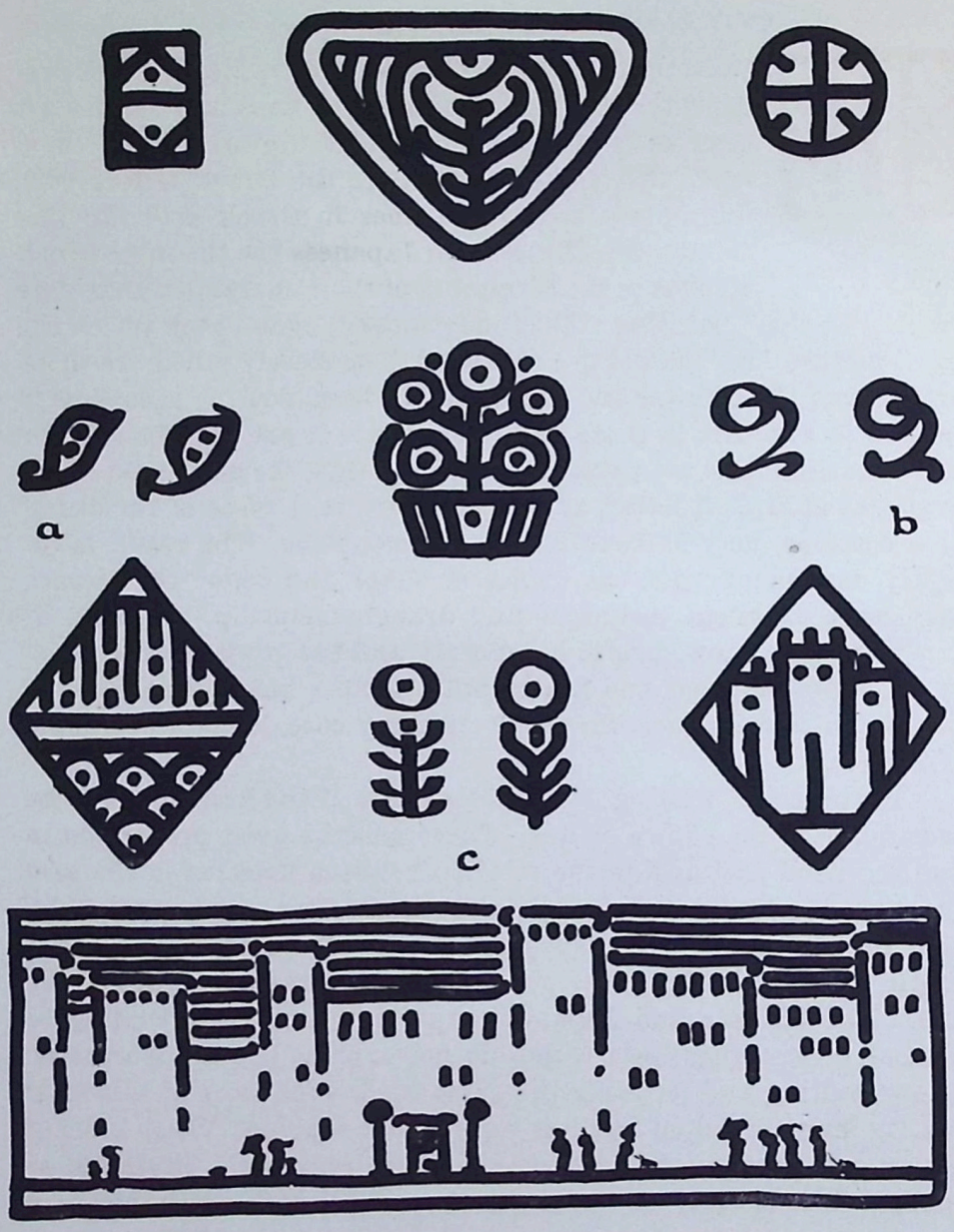
Two quotations from papers read at the Congress may be of

interest and serve to show that the view-point of foreign educators is changing, in favor of a combination of general and technical education under one institution. Mr. Leon Monfort of Brussels said, "Manual work is also needful for young girls to prepare them to be good future mothers and first educators of their children; to become perfect managers and housekeepers, liking their home, as their home, where will be reigning order, economy and beauty. Therefore I pray the assembly to accept the following wish; considering that manual work constitutes an important element of general education, and efficacious counterpoise for scientific and literary studies, and that it is a great help for drawing, teaching and other branches, the assembly presents the wish that manual work be introduced in all classes of primary and secondary schools." This interested me much as we, at Speyer School, have felt the need of a course on "The Home" with our seventh and eighth grade girls. Such a course has been started and proved a great success.

In a paper entitled "Cultivation of Taste through Manual Work," by von M. E. Beyrer of Munich, are some ideas which will apeal to those interested in having industrial education a vital part of the general school curriculum. He says: "The pupil is in the center of education. Also in art education, we have to ask, 'Whom have we to teach and to what end?' Educational ways and methods are conditioned by these two questions."

"Our first aim is not to turn individual talents into artists, but to educate the public to a more refined taste. Every branch of art is based upon manual work. Therefore we should at first teach this ground-work in order to have a sound footing for the further development of the appreciation of artistic production. These ideas cannot be transferred by teaching, they must be achieved by personal labor and experience since they are based upon craftsmanship and knowledge, gained by experience, and must needs have a field of action in the technique of manual work. To this end all movement towards the introduction of manual art at schools of general teaching should be supported and furthered."

From these quotations, it may readily be seen that the tendency is to combine general and technical training.



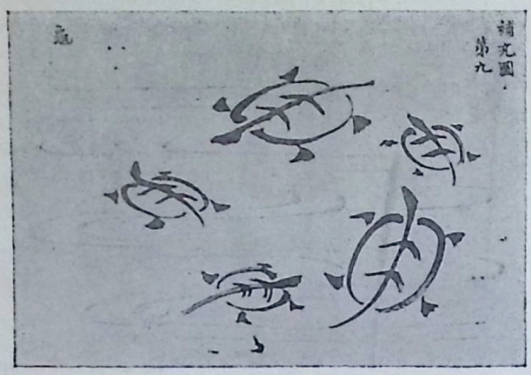
Pen formed designs
A, B, C, show the same design made with flat and round nibbed pen.

ART PRINCIPLES IN WRITING AND LETTERING

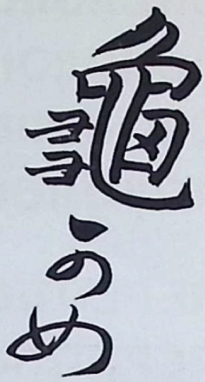
Sallie B. Tannahill

IN examining the Egyptian hieroglyphic, did you ever consider that the same kind of lines and shapes are seen as in the painting and sculpture of the country? Did you ever compare the Greek letters with the simple, restrained lines in Greek art? In like manner the Chinese and Japanese use the same brush strokes in the formation of their characters that they employ in their painting. They may indeed, even speak of "writing a picture" or "painting a character," so closely allied are these arts among the Chinese and Japanese. If, then, writing is so closely related to Fine Art in these countries, would it not be of benefit for us to consider how art principles apply in this, the most used of all branches of art? A letter, as well as a picture, a piece of furniture, or a costume, may be beautiful or commonplace. The result is directly dependent upon the choice of shape and color: the picture may have excellent technique and draughtsmanship, the piece of furniture may show careful handicraft, and the gown may be made of exquisite material and neatly put together, but if the choice of shape and color is poor, the result, in every case, is not an example of Fine Art.

In the art of writing and lettering, one of the first things to be considered is the choice of line. There must be good proportion in the line itself and also in the relation between lines, as in the arm and stem of a letter. A beautifully executed letter may be spoiled by poor proportions. Much depends, also, on the quality of line, that subtle something that gives power, strength, vigor, and life to the line. The Chinese and Japanese express this in their writing to such an extent that lines which do not express life are worthless. In our writing and lettering the great need is for more of this vital quality, more freedom and less tight, exact copying. When lines of letters are grouped to form words, there must be a rhythmic or musical flow of line. If the words themselves lack unity, how can we expect a paragraph or a page to result in harmony? The repeti-



Japanese brush drawing of turtles.



The word turtle in Japanese and chinese writing.

tion of word after word over the page is coincident with this principle of repetition in design (see figure 1). The tone produced on the page by repeating words is a most important point in this art and one often neglected. The depth of tone, of course, depends upon the size of the individual leters, the space between letters and the space between lines. Often, in the planning of a page, a difference of tone is desired. Figure 2 might be considered an exercise in values.

The spacing of the mass of writing on the page is not to be overlooked, for all the beauty and quality of line and tone is practically lost if the mass of writing does not space well on the page. Mr. Edward Johnson's book, ''Writing, Illuminating and Lettering,'' is a complete and delightful text book on this subject, and if carefully studied, with practice one may become a good letter craftsman. This practice in writing with a broad-nibbed pen (examples) as outlined in Mr. Johnston's book, will have a strong influence for good on our individual handwriting. Why not write with ease and yet legibly and artistically? Surely, it gives us much pleasure to receive a well written letter, beautifully spaced. Why not send one?

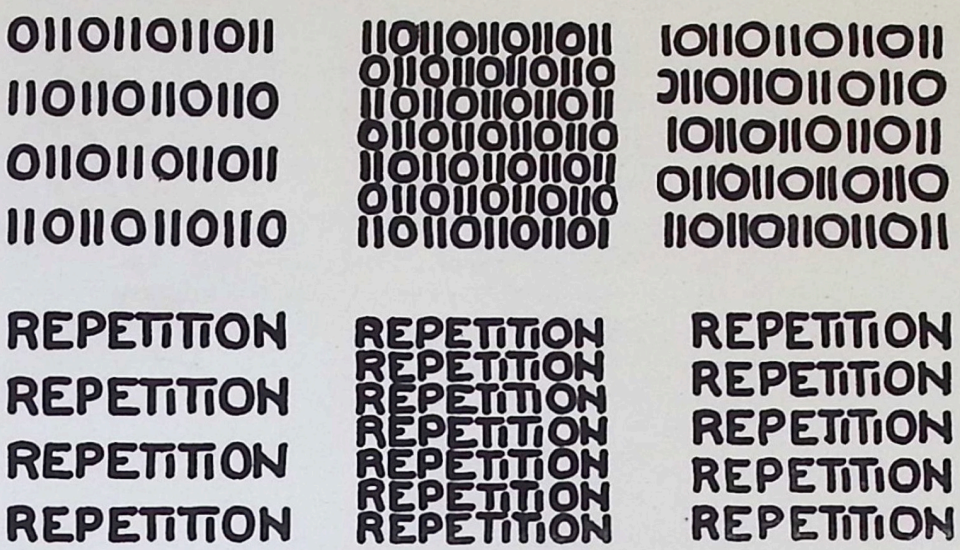
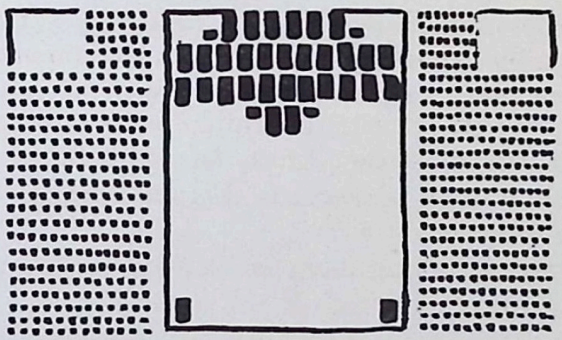


Figure 1.



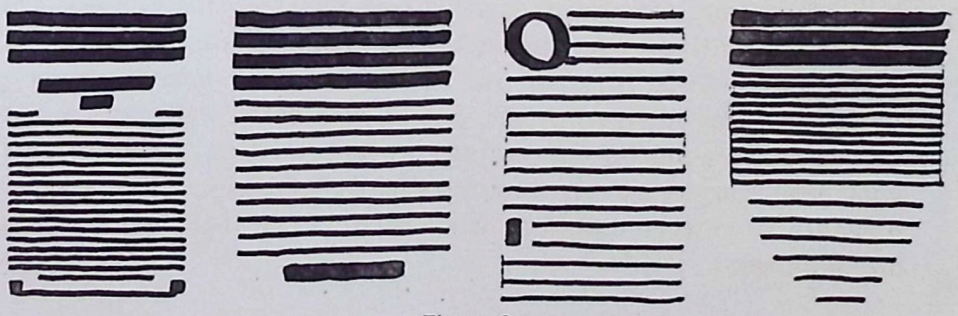
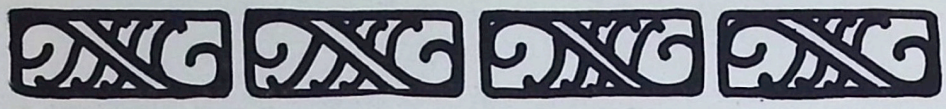


Figure 2.
Exercise in Values.

With a better and fuller education in this art of writing, our advertisements, cards of announcement, signs, labels and letter-heads, would be beautiful and attractive; our bill-boards, street cars and sub-way stations would be galleries of Fine Art.



Studies in Oil—Senior Class, Fine Arts Department.

BLUE AND SEPIA PRINTING AS AN AID IN ART TEACHING

Edna Flarida

We hear much at the present time about "Art in Photography" and every one agrees that there are perhaps wonderful possibilities, as yet undiscovered, in this fascinating line of art, but to the majority the field is so vast and the required technical knowledge apparently so great, that we hesitate to trust ourselves to try to produce anything of real value.

However, one very simple phase of photography, that of blueprinting, is open to any one who is willing to spend a little time and very little money. The field is large, and the results most satisfactory for a great many school purposes.

I have in mind a second grade, where the teacher made use of these prints and taught the children to make prints for themselves from flowers and leaves. The boys and girls were encouraged to bring the flowers as they appeared, and during the morning exercises the child who brought a new one was allowed to choose the most beautiful part of the plant, subject to the criticism of the teacher and the other pupils. He then arranged the plant or flower or leaves on the glass of an ordinary printing frame in as nice a way as he could, and the paper on which it was to be printed placed with the sensitized surface next the plant. The paper should be prepared beforehand in a dark room, and the group should be carefully arranged so that the paper can be placed in the frame quickly without exposing it unnecessarily to the light.

After the group was arranged, the child placed the frame in the sunlight for a few minutes, the time varying from one to

three minutes, depending entirely upon the condition of the paper and the directness of the sun's rays. When the exposed spaces seemed dark enough, the back of the frame was removed and the paper taken out. It was then immediately immersed in clean running water and washed until the unexposed parts were white and the background a clear blue, then spread on a blotting paper or cloth to dry. The blue-print was then trimmed to the right size to make the relation of masses as beautiful as could be, and used to decorate a calendar, showing the date on which the flower was found. Very charming compositions were sometimes made in this way, and used afterwards by pupils of the upper grades.

Some care must be exercised in choosing the plant, for a large flower with a bulky calyx cannot be pressed closely enough to the glass to keep out all the light from behind the petals, and will make an indistinct print. It is sometimes well to trim away part of the plant with sharp scissors. Sometimes, in the more delicate plants, as the nasturtium or sweet peas, even the veining is clearly shown, and here the art of blue-printing enters the realm of the science teachers' interests and adds a hint for note-book illustration.

Other uses for this interesting art make it helpful for almost any teacher at some time. There may be beautiful pictures, designs, examples of good printing, science illustrations, or views connected with history, geography or literature, that we should like to have the children see or keep. If we have not the means to purchase a sufficient number of these or an example large enough for all the room to see, and can secure a good plate or film of the picture or object, it is an easy matter to duplicate any number at little expense. Beautiful copies of Japanese stencils may be made by laying the stencil on the glass of a printing frame and the sensitized surface of the blue-print paper next the stencil. Expose the paper to the sunlight until the background has reached the desired color. The artist must learn by experience just when the exposed portions are dark enough to remove from the frame. It should then be washed until the print is clear.

In the study of printing, the blue-print may be employed as

a saving of time to both teacher and pupils, if copies of individual letters, alphabets or paragraphs are made and given to each pupil to work from. These copies can be prepared by making simple line drawings on thin Japanese paper and printing by the same method as before.

A wide-awake teacher of art is able to bring to her pupils bits of rare pottery, beautiful architecture or fine metal design, textiles, Japanese stencils, etc., which she may gather from magazines or her trips abroad, if she is able to take the pictures herself or secure the plates for after use.

Blue-prints of masterpieces may be made if a good print is available from which to make a negative, and these in turn become more valuable to the child if he is allowed to make his own blue-prints to illustrate a written article on the life of the artist and his pictures. Another use is for book-plates. These can be printed from a clear ink-drawing on transparent paper.

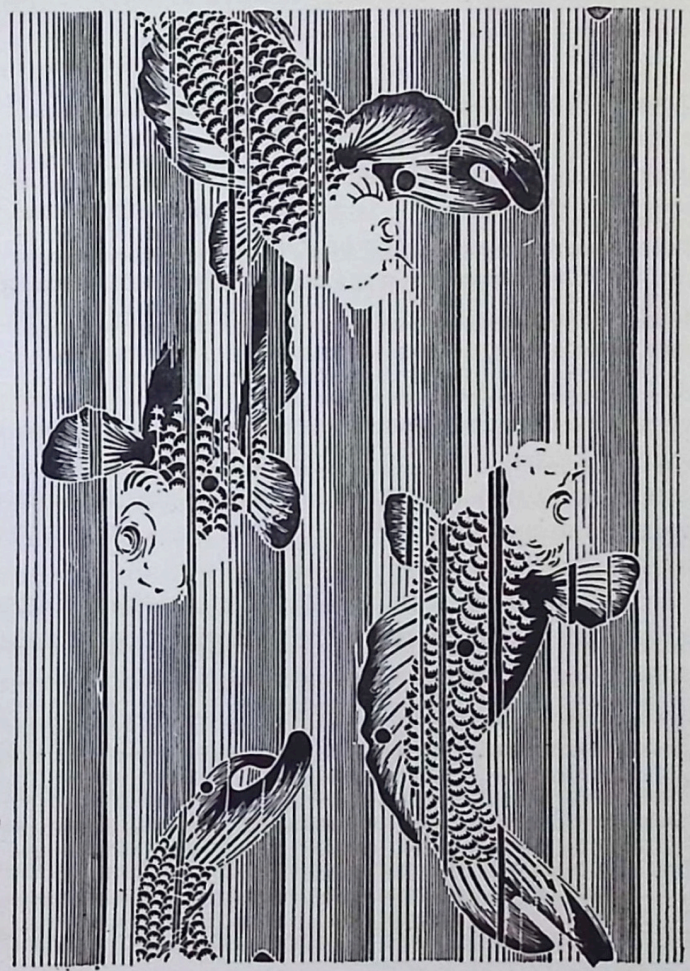
Perhaps the teacher of manual training will find the greatest use for blue-prints, in making copies of pattern drawings, working drawings, alphabets, bits of ornament, etc.

Thus far we have spoken only of blue-printing, but if one prefers it, there is a sepia paper which is used in the same way. This gives a very pleasing brown and white composition instead of blue and white. The blue- or sepia-print paper may be bought from the local photographer or any photography supply house. It cannot be kept long, however, unless the greatest care is taken to exclude all light and air. It is well for this reason to keep the paper under a heavy iron or stone weight when not wanted.

With a little practice, one can make his own blue-print paper by using the following formula: Soluble iron citrate, ¼ oz., red prussiate of potash, ¼ oz. Place both these in a mortar and grind to a fine powder. Pour over this 2½ ounces of water and let the crystals dissolve. This should be done in a dark room, for daylight quickly changes the solution and makes it useless. Now with a sponge, quite dry, or a brush, cover one surface of the paper to be used. Paper for this purpose should have a firm calendared

surface for best results. But in large masses interesting effects can be secured with water-color paper of rougher texture. After covering the surface evenly, either hang or lay it away to dry.

The prepared paper may be bought either by the roll, by the yard, or by the package cut any desired size. Some idea of the slight cost may be had from the fact that one of the most reliable firms of New York City furnishes blue-print paper in ten-yard rolls, twenty-four inches wide, for ninety-five cents a roll.



Print made from Japanese Stencil.

THE INTERNATIONAL EXHIBIT OF MODERN ART

Olive S. DeLuce

The recent exhibit of contemporary art held by the Association of American Painters and Sculptors, in New York, February 17 to March 15, 1913, has caused widespread comment and discussion. It has as its acknowledged aim the presentation of "new influences at work in other countries in an art way . . . so that the intelligent might judge for themselves." To accomplish this purpose more than a thousand canvases, American and European, as well as many pieces of sculpture, were placed on view, showing in chronological sequence the starting points and influences out of which modern art has evolved, that art which finds expression today in post-impressionism.

The Association did not stand sponsor for the paintings in any controversial sense, but desired merely to give the American public the opportunity of viewing the different phases of contemporary art. In the fore-word of the catalogue issued, Frederick James Gregg thus briefly and succinctly sums up the attitude of the Association:

> "Art is a sign of life. There can be no life without change. To be afraid of what is different or unfamiliar is to be afraid of life. And to be afraid of life is to be afraid of truth, and to be a champion of superstition."

To appreciate the position of the ultra-moderns, as represented, for example, in the work of the post-impressionist Matisse, or the cubist Picabia, it is necessary to review somewhat their artistic ancestry.

Classic painting, as exemplified by the Old Masters, represents the result of continuous study and reflection; it is not the fleeting impression of a scene, the emotion produced by the moment, but the permanent impression produced by long observation. This phase of art persisted until towards the close of the eighteenth century, when we find the classicists departing from it and tending towards formalism.

The inevitable reaction to this, a closer study of nature, is typified by Ingres, Delacroix, and Courbet, who represent respectively the classic, romantic, and realistic divisions of art. From this trilogy has sprung art as we see it to-day. The Impressionists follow closely on this detailed study of nature. Manet shows the virtue of pure color applied in bold, direct fashion, expressing the immediate vision. He works primarily for relative values, and it is not until the time of Monet that we find impressionism carried to its extreme with the introduction of the painting of absolute values, showing vibration of color under the light of the open air (the Luminists). In his train follow Pissaro, Renoir, Sisley, Degas, and Signac, Signac belonging to the neo-impressionistic school which worked out scientific color juxtaposition. With the coming of these men the imaginative element which enters into composition is slowly lost, and technique becomes an end in itself.

Gradually we find painting becoming less realistic. The colors are more intense and brilliant, and the way is prepared for the abstract, subjective, and individualistic painting of the post-impressionists. This school represents the effort to express the emotion aroused upon seeing an object, rather than the object itself. It is essentially a subjective art, largely characterized by symbolism combined with the use of violent colors. With them expression, not beauty, is the aim of art. At the head of the movement stand Cezanne, Gauguin and Van Gogh.

The first of the trio, Cezanne, uses the technique of the luminists to get a feeling of solidity and mass, but simplifies it so that the decorative element is not over-ridden by the technique. He upholds the classic tradition combined with an almost too realistic relationship to life. In the present exhibit his study, "Woman with a Rosary" and the "Portrait Head" of himself are wonderful character studies. Van Gogh seeks to express strength by archaic simplicity, adopting harsh color contrasts to typify his idea of primitive life. Paul Gauguin depicts life under the burning sun of the tropics, expressing, too, the underlying forces of nature, and the conditions which produce the subject, as well as the subject itself. The "Atelier" and the "Faa Iheihe" are perhaps the most interesting of the twelve canvases shown at the exhibit.

Matisse, the best-known exponent to-day of post-impressionism in France, is the follower of Gauguin, and in the pupil as in the master the decorative element is very marked. His color is strong and vivid. His aim of abstract harmony of line, of subordinating all details to the main impression, often nulifies the objective drawing, as can be seen in "Les Capucines" and "The Portrait of a Woman." He paints his sensations with surety and they act as an exciting stimulus to the senses. In England, Augustus John carries on the movement's tradition. His feeling for line and color is very fine and he brings to his work a delightful aesthetic element derived from Puvis de Chevannes. Max Weber is perhaps the best known of the Americans. An example of extreme post-impressionism was shown at the exhibit in Kandinsky's "Improvisation."

The Cubist pictures, which represent the most striking departure from the formal art of tradition and which for this reason provoked perhaps the greatest amount of comment at the exhibit, seek to express, besides emotion, weight and solidity—the fundamentals underlying form, stripping nature of the non-essentials and representing her by geometric planes. They get the feeling of depth by picturing the third dimension, instead of by the convention of perspective, often adding to their work decorative coloring.

Historically, they are an outgrowth of neo and post-impressionism.

The most conservative of the cubists is Ferdinand Leger, who retains in his street scenes traces of objective drawing. Picasso and Braque both show highly subjective work in sepia, "La Femme au Pot de Moutarde," of the former, and "The Violin" of the latter requiring close study for appreciation. Du Champ also paints in monochrome. His "Nude descending the Stairs" adds the element of motion to the already complicated schemes of Picasso and Braque. The picture appears to the lay mind to be superimposed repetitions of a cubed mannikin, changing to the different positions the body would assume in descending a stairway. It is in truth a representation of the mood produced in the painter's mind by the memory of the occurrence.

Picabia shows much vision in his two large canvases, "La Danse a la Source," and "La Procession, Seville." The low-toned harmony of color of the religious pageant is in striking contrast to the flaring reds of the dance.

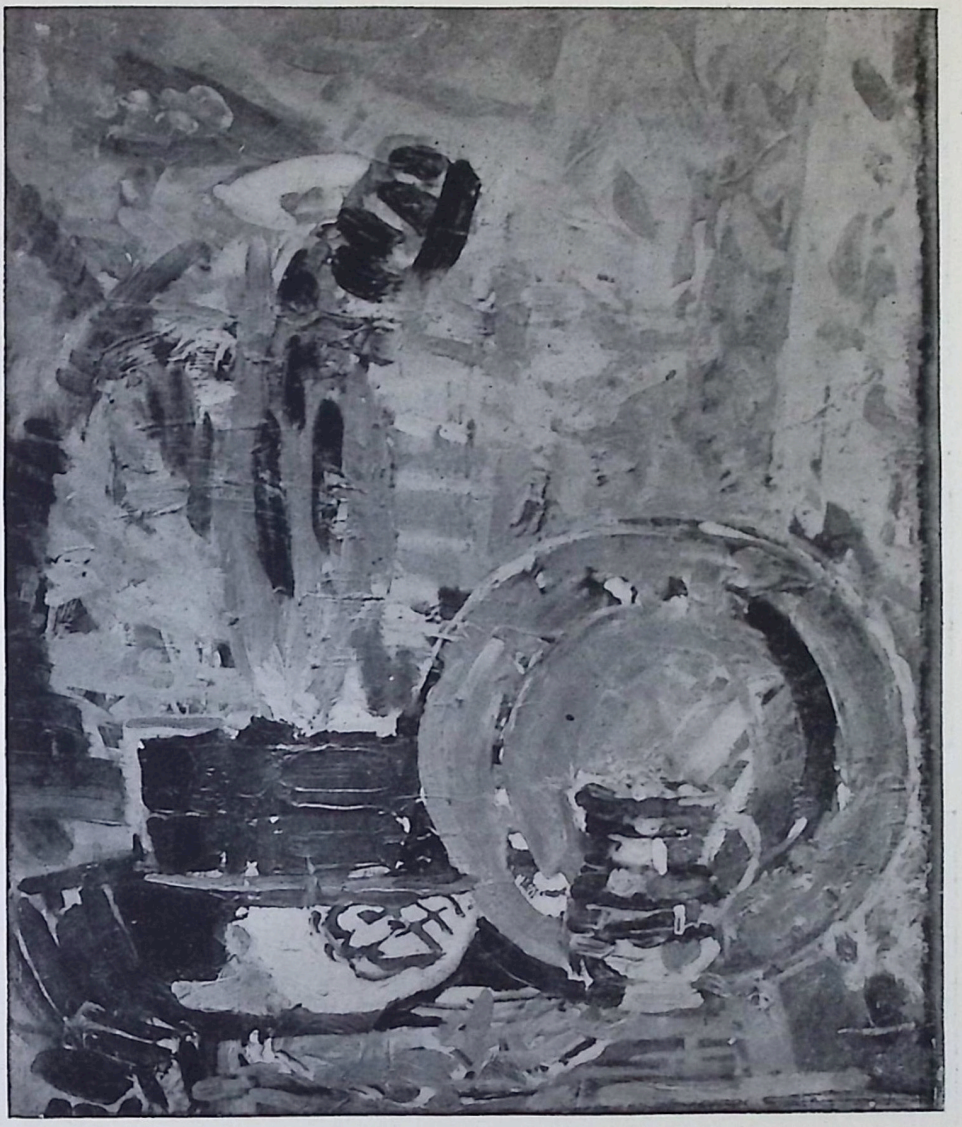
The Futurists, unfortunately, were not represented at the exhibit. They claim to go a step beyond the cubists, seeking to represent the beauty of strife and energy and glorifying war—indeed emphasizing everything which creates motion. The Italians, Boccioni and Severini, stand foremost in the cult.

In the sculpture shown at the exhibit, Archipenko represents the cubist movement. His "Repose" and the "Family Group" are archaic and rough hewn, yet clearly indicate the underlying geometric forms. Brancusi endeavors to represent in his egg-shaped heads the subjective personality of the sitter with as little objective likeness as possible. Lehmbruck in the elongated "Kneeling One" and Jo Davidson in a bas relief emphasize the decorative line.

Turning from the very positive art of the ultra-moderns, we find a room devoted to the highly decorative and imaginative work of Redon, the line drawings of Puvis de Chevannes, a study in gray-blue by Whistler, and, among our own painters, the delicate toned work of Dabo. Davies and Bellows hold their own well with

the foreign painters. There is also a number of delightful decorative panels of animals by Robert Chandler. The works of Ryder, Glackens, Weir, Childe Hassam and Prendergast, Jo Yeats, Jonas Lie and others represented, are too well known to require description here.

To sum up, if the exhibition has done nothing more, it has, as its founders desired it to do, stimulated discussion. It has brought us face to face with our own products and urged us to self-criticism. Is American art mediocre, is it lost in contemplation of itself, is it mastered by technique and unable or incapable of expressing a spiritual vision—accusations which Europe makes against us. At least America has produced a body of men who invite comparison and who are not afraid of criticism.



Painting in oil. Tone from standpoint of color impressions. Senior Class, Fine Arts Department.

Designs from symbolic motifs, Senior Class—Art Department.

SYMBOLISM IN TEACHING ART

Helen N. Rhodes

"For the earth he drew a straight line;
For the sky, a bow above it;
While the space between the day time,
Filled with little stars for night time.
On the left, a point for sunrise,
On the top, a point for moonrise,
And for rain and cloudy weather,
Wavy lines descending from it."—Longfellow.

A study of the best design that has been handed down to us reveals the fact that from the earliest primitive decoration to the productive period of the Gothic, art has had incentive partly, at least, outside of the instinctive desire to express beauty. One of the well-known authorities on Indian art gives his opinion that no such thing as ornamentation for decorative purposes existed among primitive people, and though we may consider this statement rather broad, we know that through all the periods of great artistic production, art has been a picture-story-telling, expressing the thought of the people, and especially their religious ideas, through symbolic forms. To the primitive man, whose religion is based largely upon nature-worship, what more natural than that he should turn to nature for a picture-sign through which to utter a permanent prayer for rain or a petition for a bountiful harvest? The development of his artistic sense followed in a natural sequence; for, as with spontaneous joyous activity he repeated over

and over his first crude representations of the earth, the sky and the rivers, his sense of beauty took shape in a desire to make his sign-pictures or symbols fill the necessary place on the jar, or fit into a border for the rug so that they might please his eye.

During the Mediaeval period, we find the Christian world using the symbols of its faith in all of its art productions, until the time of the Renaissance, when symbolism and design were both lost sight of, in the desire for exact representation. The invention of type, coming also at this period, made writing the popular medium of expression.

There was, no doubt, a spontaneous art in those printless, bookless days behind us, the spirit of which we cannot emulate, even if we would. Thus the question naturally arises with the teacher, as to what place symbolism can play in the teaching of art to-day.

Perhaps its most obvious use is as an avenue of approach to the great art of the past, for we can understand these great creations better by knowing something of the spirit in which the artist or craftman worked. The legendary side, even with older people, has its focusing value, and younger pupils always have a keener interest in studying those things of which they know the historic atmosphere. This interest, we believe, will open a way to more artistic appreciation. We are told that there is no Persian rug without its story. In the most beautiful examples, the weaver had made every unit play a symbolic part, even the colors themselves have a significance. An illustration of an Oriental rug, with its connecting story, will make it easier to interest the pupil in the wonderful scheme of color, and in the way in which the Oriental combines these colors to produce harmony.

When we begin the study of the art of China and Japan, we are impressed with the many ways in which the dragon is used as a motif. Would they have made such lovely harmonies from this idea, if the dragon had been to them, merely a dragon by the sea and nothing more? Upon inquiry, we find that the dragon, painted and carved by these people has meant to them a veritable force,

and a magic power is attached to his appearance in various handicrafts. One Japanese dragon loves dangerous places and is, therefore, always found upon high roofs and angles of temples. Another is fond of sound and so the craftsman carves him upon bells and musical instruments. Many of the Japanese prints with which we are familiar have a symbolic meaning. As understood by the Japanese youth, the familiar prints which represent the fish swimming up a water-fall signify the overcoming of difficulties by persistence.

The Egyptian lotus, used as a symbol, is one of the greatest pattern makers, for there are few wall decorations or textiles of that country where some form of this flower may not be found. To the Egyptian artist, it had a vital significance, for it was a sign of immortality, and in ever varying spacing and with ever varying curve, he drew and chiseled and carved it upon temple and tomb and mummy case. The attention of the pupil may be called to the unlimited number of ways in which this one motif was used. The fresh and naive spirit of the Egyptian worker may bring a lesson to all, for surely, as Americans, we have an unlimited fund of materials, and is it not because we do not use our artistic faculties in simple, creative ways, that we have such meagre results? And finally, in considering the design of the American Indian, we find he has employed both poetic symbolism and artistic sense of good arrangement in his decorated pottery, textiles, and baskets. From the triangular pattern on the skin of the rattlesnake, and the lacy interweaving of the spider-web, he has made a petition to the Great Spirit for rain, and with a conventional unit, signifying corn, a thanksgiving for bountiful harvests. The familiar Swastika, found in Oriental as well as in Indian art, has a story that is as beautiful as the design. The work of the Huichel Indians, in their textiles, is especially good to show classes as an illustration of symbols used with a splendid sense of dark and light relations.

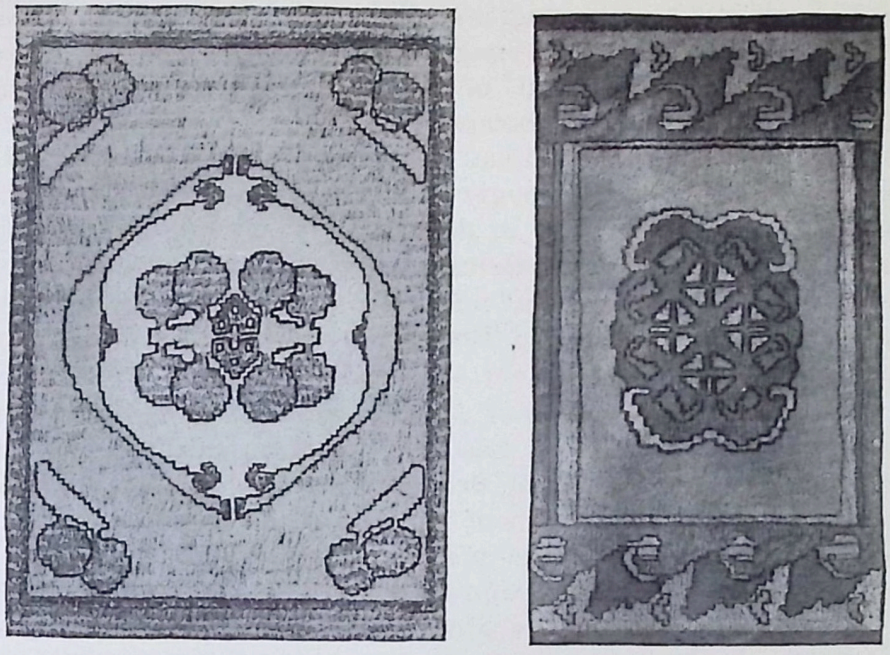
Symbolism has its chief interest to the art teacher, however, as a practical way of varying the lessons in design. Because the

subject of the rug, the border, or the all-over pattern is to be a symbol, the pupils' thought is detached from the purely representative and led to a more universal conception. In many of the subjects open to choice for symbolic design, the temptation to be merely literal or realistic in rendering, is entirely removed, as, for instance, when the pupil must study to imagine an idea that will stand for the air, or for fire, and to think of an interesting unit of line and color, into which he may transpose his thought. An exercise of this kind demands an individual conception from each pupil. It helps to cultivate a poetic imagery for things or elements or qualities. May it not also help in developing that child-like unconsciousness and frankness of thought which is the best attitude of mind for artistic production? Some of the most original work done in the art department of Teachers College this year has been that which was called forth by an assigned symbolic motif.

Most pleasing results may also be obtained from children's classes if the subject given has some vital significance for the child. In the Horace Mann School, such problems have been assigned to first year students of the high school where they have chosen as a subject the most pleasant or significant features of some summer outing or vacation trip. Each pupil had a story of his own to tell which was thought out in symbolic form, and with special attention given to spacing, was made into a design for a rug.

There is one point which must never be lost sight of when arousing interest in a lesson in design through symbolism—that it is an avenue only, merely one of the means of approach to a desired end. This ultimate goal, which must be kept uppermost in the thought of both teacher and pupil, is to produce or appreciate beauty. In the enthusiasm that may be aroused through the illumination of the historic symbol, or through the interest in the poetic side of our own design, we must take care that we do not crowd out the artistic sense we would seek to cultivate in ourselves or others. We must remember that a symbol will not make a design without the artistic perception that makes the symbol into a design, and it is immaterial how poetic our idea for air

or water may be if we cannot transpose it into a good disposition of line and mass and color.



Designs for rugs made from symbolic motifs, at Horace Mann School.

Student work from Department of Art Photography.

THE FIELD OF MODERN PHOTOGRAPHY.

Karl Struss

In the commercial, scientific, professional, and art worlds of to-day, an understanding of the fundamentals of photography is an essential requirement toward successfully solving the problems which are continually before us. In this, we may now include as fundamental, the use and application of color motion photography.

Photography, as an educational means alone, is of prime importance. It gives us knowledge at a glance and a few moments' study, that formerly required pages of description and hours of memorizing. It is a well-known fact that the memory of pictures is more vivid than any other means of association. The mental picture once formed holds practically for life in the mind's eye. In this modern age, wherein commerce influences the tendencies of the times, we find a continuous effort towards reducing the costs of production by increasing the efficiency of the laborer. This has in many instances been brought about through the employment of the motion picture machine. Formerly, in a large manufacturing plant, it took an employee thirty-five minutes to assemble a certain machine, but since the advent of motion photographic study, illustrating the desired process and thus reducing the lost motions to a minimum, it has been made possible to assemble the same machine in eight minutes; a saving surely worth while in any field of endeavor. In other words, we gain a maximum of output with a minimum of effort.

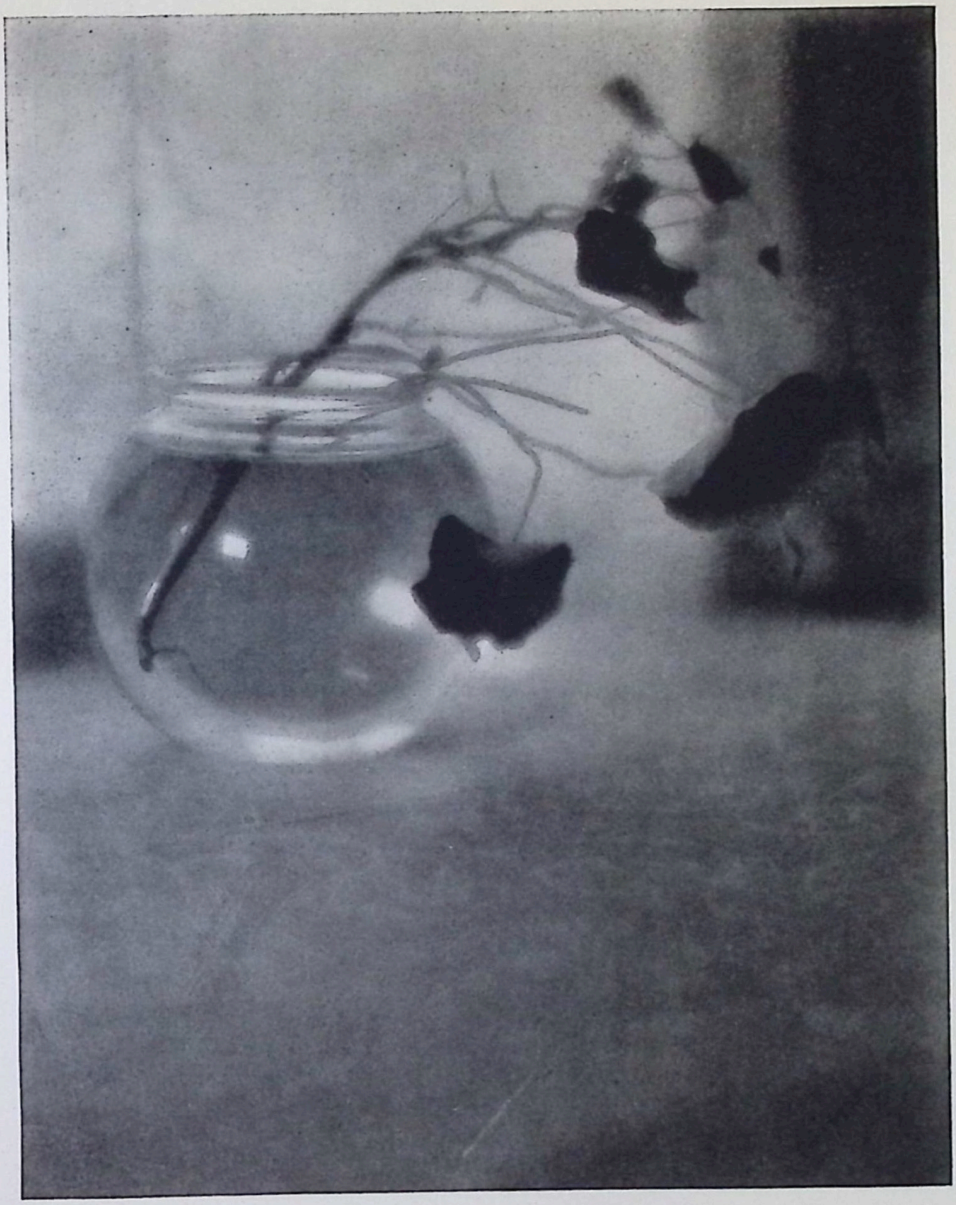
In another instance the science of astronomy could never have made such remarkable developments and advances, towards more definite conclusions regarding the celestial world, were it not for photography. The modern astronomer does not stay awake nights star-gazing, but has photographic plates made, which he examines leisurely and alertly under the microscope the next day. The discovery of photography by invisible light has made it possible to

even tell of what substances the moon is composed. This only begins to reveal the possibilities that photography presents to the research worker.

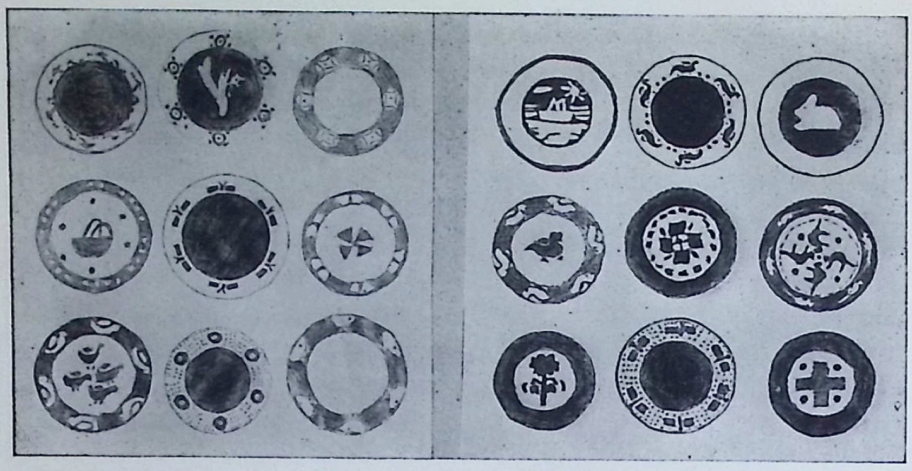
In the medical world, some of the best dental and surgical clinics are having their rarest and most difficult operations, which are usually witnessed by only a few students, now recorded by motion photography, and these films are sent to colleges throughout the country. Used in connection with lectures, it is possible in this manner to acquaint a greater number of students with the most recent advances of science.

It seems almost unnecessary to speak of the advantages that will accrue to the architect or the interior decorator, who, with a pictorial photographic training will be able to interpret his finished work in the spirit conceived, instead of having to leave it to the average commercial photographer, with a purely mechanical point of view.

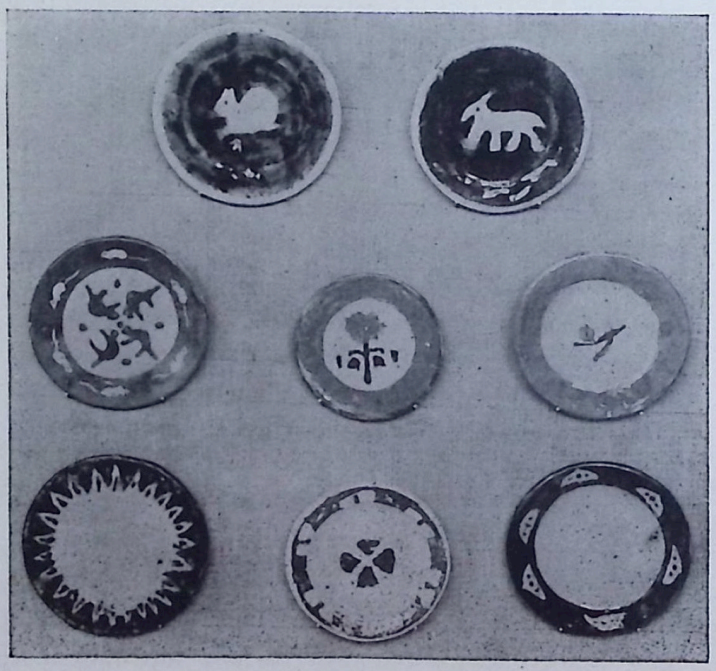
But it is in the field of art that photography takes it place as an individual, fluent and personal medium of Art Expression, which reflects not only this scientific era, but also the mastery of the mind over the subservient tool, point, chisel or lens.



Students work from Art Photography Department.



Designs for plates—fourth grade.



Finished plates.

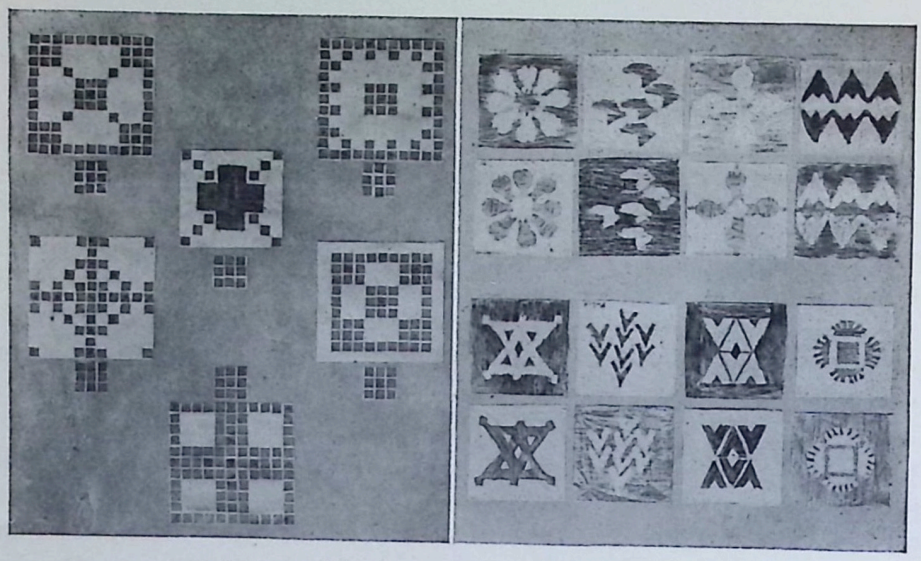
A PROBLEM IN FINE AND INDUSTRIAL ARTS.

Lucy H. Wiser and Lucia W. Dement.

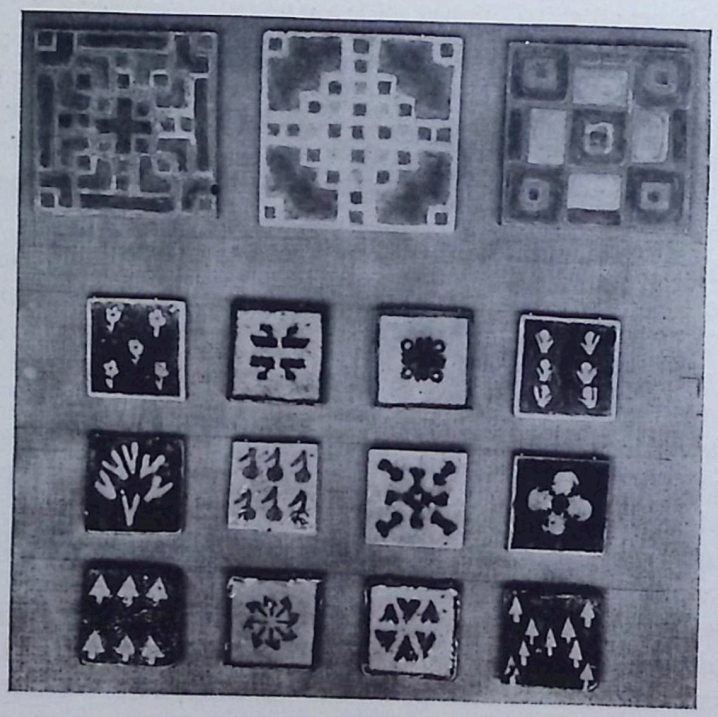
One interested in seeing the work for the little people become a well-rounded unified whole can readily understand the advantage of the departments of Fine and Industrial Arts working together upon problems which have a definite interest for both. Much time can be saved by each department doing its part, and if each department keeps in close touch with the workings of the other, the instructors can develop methods which will greatly add to the successful outcome of the problems.

Among the many interests at the Horace Mann School in which the fine and industrial arts combine, the making of plates in the Fourth Grade has been particularly satisfactory. The special phase of the pottery industry, as studied in the Fourth Grade, is the making of china dishes. Plates were chosen for the manipulative problem in connection with the study, as being representative and illustrative of a typical method of working in clay, and the industrial processes were approached as nearly as possible in the work.

A lump of rather stiff clay was well kneaded and hammered out with a wooden mallet into a thin layer, a little larger than was needed to cover the mould. Up to the present time we have used plates for moulds, but we have recently made moulds of plaster which will be used in the future. The layer of clay was then placed on the top of the plate mould and pressed gently to it. A knife or clay tool was used to trim the edge even with that of the mould. The clay plate thus shaped was next taken carefully from the mould and the rim braced, if necessary, by placing a coil of clay under it until it had stiffened. No attempt was made to shape the bottom of the plate. This much of the work was accomplished in one lesson. In the next lesson the edge was rounded, any unevennesses removed, and the whole sponged and placed away to dry. When thoroughly dried the diameters of the center and rim were measured and concentric cir-



Designs for tiles and mosaic, third and fifth grades.



Finished mosaics and tiles.

cles of the respective sizes drawn on a paper to be taken to the art class for the designs.

At this point a trip was made to the Metropolitan Museum in company with the Industrial, the Fine Arts, and the room teacher. Here a study was made of good plate patterns, which was supplemented in the class room with a collection of photographs of fine plates in foreign museums. In studying the plates, the aim was to impress the fact that any subject desired could be used for a pattern unit, the point being to adapt it in a fine way to the spaces of the plate.

Each child made several units indicating his own preference. The instructor added a mark for her preference and one was chosen. First it was repeated to form a center pattern and then a border for the rim of the plate. Both were used, or one was rejected as best suited the case.

Next a tracing was made on transparent tracing paper to take to the Industrial Art Class, and another made upon a good shade of blue grey paper to be carried out in Fine Arts as a plate-pattern in Dark and Light. Each child decided whether his plate should be a dark pattern on a light ground or a light pattern on a dark ground, and carried out the same on the gray-blue paper with dark-blue crayola.

In Industrial Art the patterns were transferred to the plates by blackening the lines of the design, then placing the paper on the plate with the blackened lines next it and tracing them over from the opposite side. The paper was cut so that the designs for center and rim were in separate pieces for transferring.

The plates were then colored according to the scheme of Dark and Light made in the Fine Arts Class. The natural color of the clay was used for the light in the design and blue, green, or red underglaze color for the dark. After this they were coated with a colorless glaze and fired.

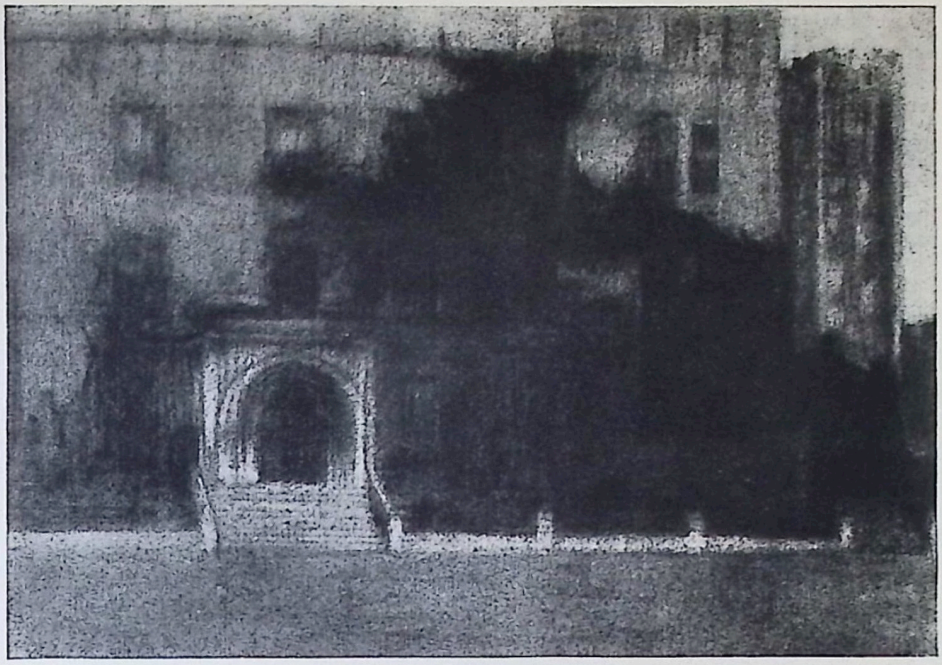
These plates have been made by the combined efforts of the two departments for three years and each year brings new methods and better success. Other problems satisfactorily worked out in

the first five grades by the co-operation of these two departments are rugs, vases, bowls, picture-frames, tiles, and mosaics.

The blue and white tiles in the third grade are made in connection with a historical study of the Dutch people. In this problem the children select objects in which they are interested for the subject of their patterns—just as the Dutch chose boats, windmills, etc., for their patterns.

The Fifth Grade mosaic is correlated with the geographical study of Italy and Venice. The mosaics of Italy are compared with those at the Cathedral of St. John and the mosaic floors in the school buildings, and traced through the buildings of India to the Orient.

The children make their designs from squares of cut paper which they paste on a squared paper foundation. The best are selected by class-vote and taken to the Industrial Arts Class where the mosaics are made in clay, glazed, fired, and cemented together. We hope to use them for decoration in the cement wall of the school on the roof.



Charcoal studies, Senior Class, Fine Arts Department.

Flower Compositions made in Design Class

WHAT'S IN A NAME?

Dorothy C. Rowell

"What is manual training, and why did you give me 'poor' on my report card?" The indignant questioner was a dreamy-eyed Italian girl who had been transferred in mid-term from the ungraded room to the fourth-year class. Never before had she shown interest in the school work, much less such excitement as at present. "We didn't have any manual training," she insisted, in stormy protest.

"Manual training's sewing." The teacher tried to explain to the girl how the making of note-book covers might come under the same head, and wondered, meanwhile, why she should be teaching manual training at all.

Manual training, hand training—. Do we then, in certain hours of the elementary school week, attempt to teach manual skill, apart from the controlling thought-stuff of life, or even to put the emphasis on such skill? Why should we single out this wheel of the human machine, to turn it alone? Modern thought asks us rather to see that the child functions as a total human being. It may be well, in the course of building a machine of iron and steel, to turn and test one wheel at a time, but the child's personality grows, not as an accumulation of parts, but through the gradual development within itself of related ideas, and powers, and habits. Until such relation is wrought out, these can never be a vital part of his being. Hand and ear, and eye, and tongue, and brain, must work in living harmony, or the education of these parts is of no avail. Why should teachers be asked to train isolated hands?

Of course it is necessary that the hand gain skill, both to express ideas and to receive impressions. But the question still remains: why have assigned periods for training the hand, any more than for training the eye, the ear, or the organs of speech? We insist that these skills shall be gained through subject-matter which is justifiable in itself, worthy of a name. Certain phases of sense training are involved in literature, language study and music. We

concern ourselves largely with the thought to be gained, believing that interest in this, with well graded material and through abundant practice, will give eye, and ear, and voice, the training they need. We keep in mind our purpose of developing normal use of the powers, and we study the conditions and methods of normal activity, which in actual life demand thought-control of the senses as tools. Economy requires that habits be formed as they are to be used. Drill must be made purposeful and related to the solving of real problems. New ideas must make the mechanical processes worth gaining. The school problem is to provide, under limiting conditions, opportunity for use, suitable to the age and grade of the children.

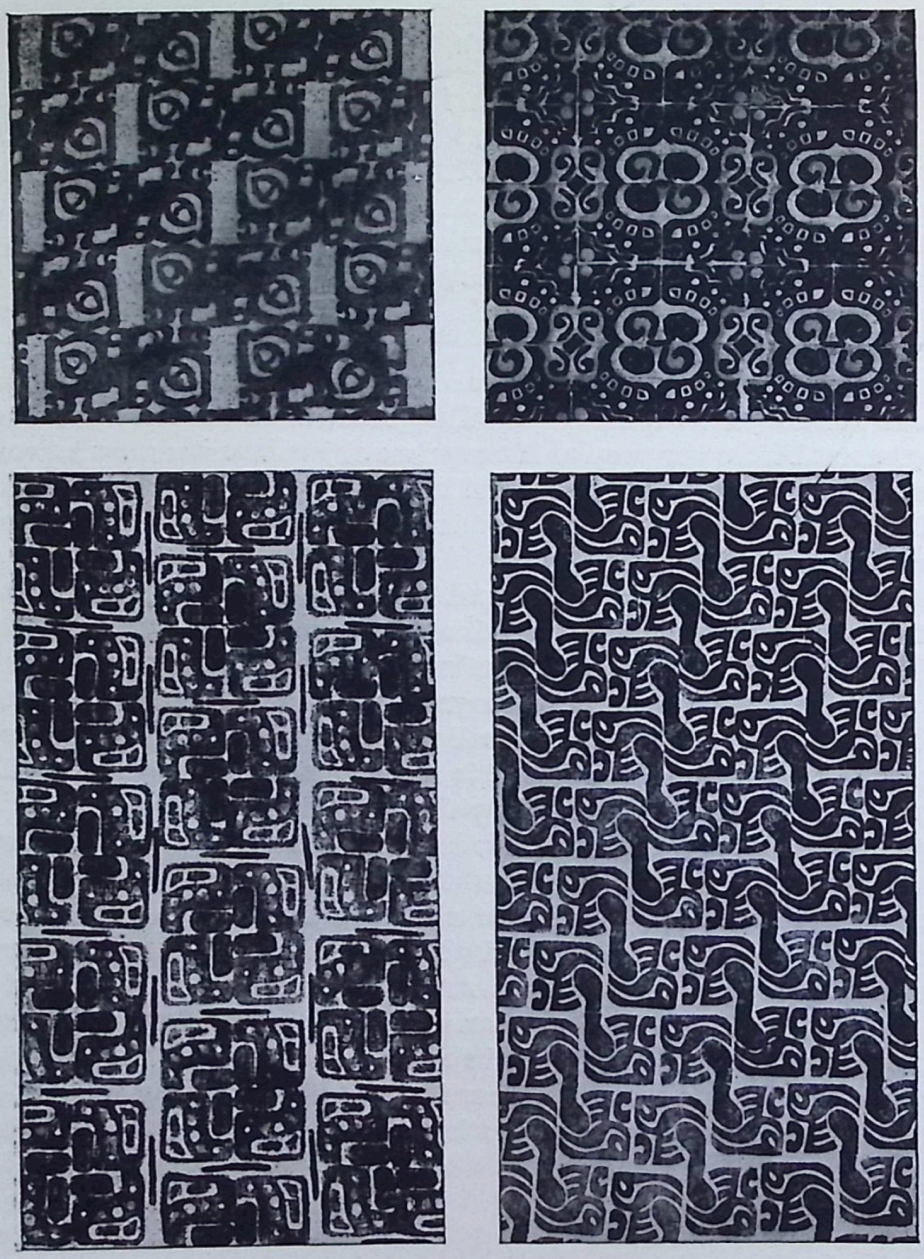
Shall we then leave out the manual training periods? No, for reasons given below, but the work should be put on a more defensible basis. Hand training is an excellent thing, but isolated, it means little. It does not fairly represent what we are trying to do. The advantage of the term, manual training, has been that it boldly defended the use of hands, in the course of school education, as a legitimate avenue of approach to the brain. Formerly, such use, either for gaining or expressing ideas, was unthinkable.

Hand work came into American schools partly through the Swedish sloyd influence, and partly through the growing belief in education for practical life among some dreamers of a few decades ago. The vitality of each idea lay in its close relationship to the social and industrial life of the times. Begun as an experiment in schools like Pratt Institute, hand work in education has proved its value beyond doubt. But just wherein does that value lie? Surely, not in the unthinking use of tools, but in the new thoughts associated with new activities, in the new power of gaining ideas for one's self.

While teaching hand work we have stumbled on a rich mine of human thought, a wealth of subject matter of basal significance to all classes of modern society. Perhaps we have not felt the value of it keenly enough. The story of man's progress through the ages, from earliest savagery and barbarism to modern civilization, has

been one of his gradual and successful conquest of his successful conquering of environment. Man has bent the materials and forces of nature to serve his needs as they arose. Progress to-day depends on the same conditions. As that progress goes on, more rapidly than ever before, and more subtly hidden from common view, we need to understand these materials and forces, and the processes by which they are brought to serve our needs. How shall we otherwise appreciate values, distinguish what is appropriate, live wisely in a world grown suddenly so complex? The world of industry surrounds us on every side, it serves us at every turn, it permeates every other social relationship. Our politics, our laws, our literature, our art, our science, are all involved. The problems of industry are the greatest before our people. If the prime object of elementary school education is that children should learn to live well in the community, what is more important to them than understanding the basis of our community life?

Why not admit that the hand, like the eye or the ear, is a tool, to be used, like the work-shop chisel, wherever that particular tool best suits the purpose of the workman? If hand work, in the form of map-making, gives a child geographical ideas most economically, by all means let us use it, and call the work geography. If he uses a pencil, or crayons, or a brush, to communicate graphically, and if such hand-work develops chiefly the appreciation of form and appearance, call the process the study of art. But if the content gives an appreciation of modern manufactures and the structure of modern industrial society, by all means indicate the point of view in the name. Let us give the boys and girls something worth naming for every hour of the school time. And let the name, for the sake of teachers and children alike, be an inspiration rather than a clog or hindrance to a clear view of the situation. If a more significant name can bring a wealth of new ideas and associations into consciousness, is not the change worth while?



Wood Block—Printing for textiles.

WOOD BLOCK-PRINTING—A FASCINATING FIELD FOR EXPERIMENTATION

M. Eleanor Gibbons

It is thought the Egyptians knew the Oriental art of wood block-printing several thousand years B. C.; the Chinese printed their books in this way as soon as paper was invented; the Hawaiians stamped cloth with rude implements; the East Indians decorated their dyed fabrics by means of simple blocks; Durer in Germany developed the art in wood and copper plate. Beginning with the eighteenth century the Japanese developed block-printing into an art of their own, making it represent their national life. At first, they used only black and white, adding color by hand; then came the discovery of printing the colors from a second block, and after this the number of blocks was increased. Their printing became famous all over the world, but modern commercialism and lack of masters caused its decline.

The easier forms of block-printing may be used very successfully in school work, and the following mode of procedure is suggested. For the printing block, choose soft wood, close-grained and without knots, such as pine, gumwood, boxwood or holly. The size is optional, but should be at least ¾ in. thick and 1 in. square, as a block smaller than this is not easily managed by young children. Next make simple designs on paper of desired size, using black and white masses with few details. Have forethought as to the effect if repeated in pattern. Now make a tracing on Japanese paper with brush and ink to insure clearly defined shapes, and paste this face downward on the block. Incise the outline of the design with a sloyd knife to the depth of ⅛ in., and remove the background

with a gouge. Finally remove the remaining design paper and the block is ready to be used. Glue some felt to a piece of glass and you have a pad on which to charge the block. Saturate the pad with thick water-color or ink to which mucilage may be added. Use a padded drawing-board and any paper that will take water-color well, and you are ready for the fun of printing the block. It it done by charging the block on the ink pad and pressing it to the paper or cloth to be printed somewhat as post-office clerks stamp letters. When the block does not print well, the trouble may be that the design is not cut deep enough, that the paint is too thin, or that more pressure is needed in stamping. It is interesting, after securing a good print, to make some experiments, such as stamping on dampened paper or cloth. The latter is satisfactory, for it absorbs paint well, but after drying it must be pressed to remove the wrinkles. Another experiment is to stamp the design in ink and, when it is dry, fill in with strong colors. Oil paints (mixed with turpentine) may be used by applying it with a bristle brush directly to the wood block. Sometimes several blocks are made for the same design, each block stamping a different tone as is done in printing landscapes on soft rice paper. Only advanced students should attempt picture-printing with many blocks, as it necessitates over-lapping transparent colors to produce new effects. Simple problems, such as the decoration of note-book covers, posters, calendars, programs and pillow designs, are useful for individual work, while stamping curtains may serve as a group-exercise. Crash, cotton crepe, coarse linen, denim, monk's cloth, art cheesecloth, scrim, grass linen, pongee and silk may be used successfully, but a smooth glazed surface does not receive the print well. In washing any of these materials, lukewarm water and pure soap are necessary as well as quick drying. Oil colors wash well; dyes are not so reliable; water-color mixed with mucilage must be pressed before washing. Fading sometimes occurs, but it is not always a disadvantage, as the brilliant colors are sometimes rendered less striking.

Block-printing is useful in the school, as it teaches line-har-

mony and space-variation, both of which are essential to good composition. It is essential to a study of color-harmony, which requires balance of intensities of bright and dull tones, and a thoughtful arrangement of lights and darks. It is a quick means of teaching rhythmic repetition by arranging a unit so as to produce harmony of spacing in borders and in surface patterns. It gives the child not only the artistic, but the industrial side of printing, since it combines manual skill with art appreciation. It teaches a few of the principles of printing newspapers, magazines, books and cloth, and goes far toward applying another modern theory of education, that of bringing the pupil into touch with the industrial world.

Charcoal Composition, Senior Class.

Design by Noemi Pernessin.

THE DECORATIVE USE OF THE FIGURE IN ADVERTISING

Jean Corser

In all the field of design there is no motif of more effective character than the human figure, and for this reason the advertising designer's use of it may be his strongest appeal. With the very rapid growth in late years of intelligence about art has come a demand for more than a merely pictorial use of the figure. As a direct outgrowth of this broader desire, we have the brilliantly suggestive work of many gifted men.

Certainly the sincere designer is obliged less and less to fight fake ideals when he wishes to affect large audiences. There is every year more recognition of the principle that that which is refined and true to art ideals is most lasting in its interest and influence. With this revival of the spirit of less confused times there has come into advertising art an entirely new motive, a desire for the very direct and the suggestive. The over-realistic treatment of nature, which is not truly realistic at all, is at last losing its hold and its day will probably not be long.

It is the school, more than any other one influence, that will in the near future direct this new demand. Indeed, it is not assuming

too much to say that it is already in a small way contributing toward the demand for necessary talent as well as supplying it.

Figure-study in the elementary and secondary schools has not realized its full possibilities of fascination for growing children, largely because there has been a lack of clear discrimination of motive. Children are expected to see an adult and abstract end in their drawing. It is as though we were to explain words with fine shades of meaning and then require a sophisticated use of them before there is mental development enough to understand them. The very vital subject of advertising, which fascinates young Americans more than they can possibly guess, gives a definite motive for the use of the figure, and it does not demand more knowledge than a child may have in order to gain an effective result. With the great wealth of illustration that reproduction makes possible, can be furnished inexhaustible inspiration.

Boutet de Monvel and Aubrey Beardsley, though not advertisers, furnish examples of all that is fine and at the same time direct in the treatment of the figure. De Monvel, with his charm and simplicity and strength, can be as easily appreciated by a child as by those who are capable of understanding the extreme subtlety of his drawing and composition. The work of Beardsley is a vivid illustration of an art which has utterly disregarded conventional drawing and created thereby an absolutely unique expression. This is not a dangerous idea to expose to children if kept in its proper relation to the truths. The pen and ink drawings of Walter Crane and Howard Pyle are suggestive of uses to which their originators never put them. A possible application in advertising of something of their quality of quaintness might help to give breadth to the field of illustration. Edward Penfield and Will Bradley are individual masters who have given us types of great value in beautiful and practical advertising.

Among the later men who have given themselves particularly to advertising are Wildhack and Louis Fancher. Both are tremendously popular because of the directness of their appeal, and both justly so because of their secure sense of design. Some equally

strong work and much that is fine, but not so widely recognized, is being published almost daily, and it should not be difficult for teachers to find ample material for illustration in this line.

The message from the Japanese use of the figure as an embodiment of unified form and color, rather than a less subtle expression of life and activity, is being studied by thoughtful designers. Would it be too much to hope that this spirit of eastern refinement may some day be appreciated by the general public, and are there not already in some popular forms of art the beginnings of an appeal to this kind of imagination?

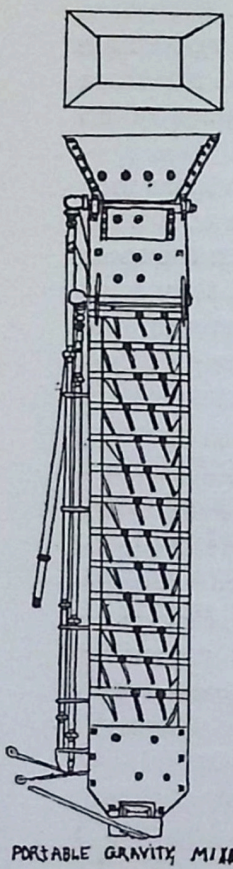
If children can be made to see the flat way in which these men have chosen to work, and the evident use of the figure as a mere incident in the whole effect, with an appreciation of even the most obvious marks of individuality of conception in design, they have reached a very desirable plane of imagination. In this one vital line of connection with the outer world, which is gained through interest in advertising, teachers can hope for a real application of art principles.

The comparative youth of this line of thought makes its future a fascinating one, and with suggestions from the work of great individuals it is likely to be a broad and brilliant field of activity. Surely the indications make one hopeful of a strong development in this particular subject and especially of a promising growth of race imagination.

CEMENT AND CONCRETE

An Industrial Unit for the Eighth Grade

Leon Loyal Winslow



Heretofore too much has been attempted in the eighth grade. It is none the less true that little has been accomplished. Under the present organization of our school system the first year in high school has often meant a repetition of a large part of the preceding year's work. These conditions have been greatly improved in some instances where a conservation in time and in effort has brought about the elimination from the eighth grade curriculum of all units which, psychologically, are too difficult, and which thus demand a repetition in the high school.

In the majority of our eighth grades it has been customary, in the past, to teach shopwork; and this shopwork has meant wood-working exclusively. The technical aspect has too often been over emphasized, and the success or failure of the course has been determined at the yearly exhibition of pupils' work. This state of affairs has been dangerous to the best interests of eighth grade boys, in that it has permitted development along but one general line where the endpoint has been a finished product, through the making of which, skill in the use of a few hand tools has been attained. The system has been wasteful in that it has devoted too much time to a single phase of industry in a place where specialization should have been only suggested.

When our eighth grade becomes broad and liberal, and opposed to all narrowness and specialization, it will reach out into many fields of industry, that its pupils may be better able to make a choice. Industrial investigation will succeed manual training and the school shop will become its laboratory. The shop teacher will

assume a greater burden, but one which unquestionably has the compensation of being worth while.

An investigation of cement and concrete was recently undertaken by an eighth grade in New Rochelle, N. Y. The class was interested in this industry from the start. After the field had been surveyed in a general way, it was found that the material might be organized to advantage under some twenty sub-heads, each member of the class making a special effort to find out all that he could about one of these. Through the helpful co-operation of the principal of the school and the two eighth grade teachers, the boys were encouraged to write down the results of their investigation in the form of compositions which were graded by their English teachers. The composition in each case was to contain the sources of information. Several books bearing upon the subject in hand were collected by the teacher and the boys. These were placed upon the shop book-shelf. They could be referred to at any time and might be kept out over night.

Two weeks' time was allowed for the preparation of these papers, although the subject had been discussed in the shop for sometime previous. At each recitation period all progress made during the preceding week was reported by each boy. After all the information had been collected, the papers were written. The following sentence, which appeared in a recent number of ***Printer's Ink*** was offered as being helpful in the writing of a composition: "It is a fine thing to be thoroughly familiar with a subject before talking about it, because then it isn't necessary to talk so much."

After the compositions had been handed in, a committee consisting of the principal, the two eighth grade teachers and the shop teacher judged them, as best they could. The six boys handing in the best papers were chosen as editors of the large paper. The duties of these editors included the re-arrangement of material, and the writing of an introduction to the paper and of connecting paragraphs and sentences. The names of the editors appeared in the order of their efficiency as displayed in carrying out this work.

Before proceeding with the class paper it may be of interest to

know that the boys at present have the work of construction well under way. Several barrels of material were bought from local dealers. The delivery slips and bills were made a part of the general instruction. All forms will be ready for the concrete within a few more weeks at most. The objects to be made include pedestals, flower pots, window boxes, etc. Two members of the class are making garden benches, and one is making a dog's house, similar to the one described by Miss Rowell in the last issue of *Art and industry in Education.*

A STUDY OF CONCRETE

Eight A. Class of Winyah Avenue School

EDITORIAL STAFF

Robert Merkle, Editor in Chief
Sidney Lidz
Walter Lantz
Leonard Grosso
Edward Gockeler
Leon Creato

A person does not walk far to-day without seeing some object constructed of concrete. The strength and endurance of this material have made it popular for the construction of things which must weather much.

Present day uses, by William Berwick, James Attisani. Ref. Mason Builder. Concrete in Highway Construction. Concrete in Railway Construction.

It is in general use for sidewalks, curbs and gutters. For curbs and gutters combined, it is used extensively in parks and residence streets. These streets are not only durable but clean, noiseless and pleasing to ride over. Concrete is also used for sewers. A few years ago all sewerpipes were made of stone and of vitrified clap or cast-iron. Concrete is more durable for this purpose. It is not liable to leak with heavy loads of water; it is smooth and cannot leak.

Culverts for highway bridges are made partly or wholly of concrete. Other important uses are for dams, houses, statues, walls, chimneys, fence posts, boat piers and the treating of the decayed parts of trees.

Historic Information, by Sam Bersohn. Ref., Mason Builder.

In the olden days concrete was used much as now. The Romans made many of their buildings of it. Their concrete was much the same as ours, but it was made differently. A good proof of the durability of concrete is shown in some of these ancient buildings which are standing to-day, as the Roman Pantheon. They used volcanic ash in place of our sand, and perhaps that has made a difference. They must have taken great pains, as their buildings are still standing. Other nations which used concrete are the ancient Chinese and Egyptians. The Chinese made a great wall on their northern boundary to keep out the enemy. It was built about the year 214 B. C. and is still standing.

What Concrete Is — Its Advantages, by Leon Creato, Ref. Concrete In Railroad Construction, Concrete Construction.

In order to prove why concrete has been used so long and is still being used, we ought to know what it is composed of. To-day it is made of Portland cement, sand, and broken stone or gravel. The stone and sand are called the aggregate. The cement is called the matrix. Concrete is used so much because it is cheap, and the older it grows, the stronger it gets, while steel and wood rust and decay. In addition to this it is proof against tornadoes, floods, fire, and earthquakes. For instance, in San Francisco many concrete buildings stood the shock while those of wood and brick fell.

Old Method of Making Cement, by Rocco Dalessandro. Ref., Encyclopedia Brittanica, Manual Training Magazine, Popular Mecanics Magazine.

The kind of cement used most to-day is Portland cement. It was named Portland, because it looks like Portland (England) stone. The process of making Portland cement to-day differs greatly from that of former times. They used to make Portland cement differently then

The raw material for cement is often found to-day in rock called cement rock. This rock is drilled and broken into big pieces. These pieces are then put in cars and taken to the crusher. Then they are ground and taken to the drier and dried. After it is dried, all moisture is out, and

it is taken to the weigh-house and weighed. After it is weighed and mixed with lime, it is brought to the rotary kiln.

But cement is made of mud to-day, just as it used to be made in England. The mud is taken from the bottom of rivers and dried. Lime is dried with the mud, and then they are burned in the rotary kiln. The drier is a tube which is slanted. The material gradually goes through it while it turns around.

Rotary Kiln, by George Fanelli. Ref., Manual Trading Magazine, Edison Portland Cement Co.

The rotary kiln is a huge machine for changing cement rock and lime, or river mud and lime, into cement clinker. It is a tube, usually about 100 ft. long and 12 ft. in diameter. It is made of steel, lined with fire brick.

In about the center of this tube is a driving gear turned by a motor while the burning is going on. At each end of the tube is a riding ring and two rollers, which help to revolve the tube. The tube is revolved in a slanting position, the lower end being heated. At the upper end, the materials are put in by means of a funnel. Then coal dust is blown in at the heated end. Thus the coal burns and causes the change of cement material into cement clinker.

Ball Mill, by Thomas Faso. Ref., Vulcan Iron Works.

The machine which comes next into use to make cement is the ball mill. It is used in grinding cement clinker into Portland cement. The ball mill grinds lump rock into dust. All material that leaves the mill is a finished product. The material to be reduced is fed to the mill from an overhead bin. There is a feeder which makes the amount of material, entering the mill, uniform. The grinding is done by four steel balls which roll in a horizontal grinding ring. These balls are rolled around by four pushers attached to a central shaft. The fine powder is drawn out by a fan.

Experiment with Sand, by Sidney Lidz. Ref., Mason Builder.

The kind of sand used in concrete work is important. If vegetable matter is in sand, it is unfit for use. Coarse sand is also necessary. It has been demonstrated that coarse sand gives a stronger mortar. For

work that is unimportant, fine sand may be used if free from vegetable matter.

The sand which we have in the manual training room is fine. I made the following experiment to find how much vegetable matter or loam was in it. I found the experiment given in the ***Mason Builder.*** I took a quart fruit jar and filled it with sand till it was 4 ins. deep. Then I added water until the jar was filled to within 3 ins. of the top. I screwed the cap on and shook the can for a few minutes. I then let it settle for a few hours, until the water on top was clear. The sand sank to the bottom, while the fine material formed a layer of darker color above it. The layer of fine material or loam was but 1-16 in. thick. The ***Mason Builder*** says that if the layer of loam is ½ in. thick the sand is unfit for use. Our sand is good.

Water, by Arthuro Fink. Ref., Cement Construction.

If sand is not clean it must be washed in a trough, because washing with a hose sends the dirt down. Dirty stones or gravel should not be used. The water used must not be drawn from a pond in which manure and waste matter are dumped.

One night I went down to the manual training room and got some cement, some sand, and some gravel. I made five different mixtures. The first two mixtures I made without color and the rest I made with color.

The neat mixture I made by using cement and water only. When I had the cement and water thoroughly mixed I put it into a form like a cube.

Experiment with Concrete Mixtures, by Leonard Grosso. Ref., Cement Construction.

The rich mixture I made by using one part of cement to two parts of sand to three parts of gravel (1:2:3). The cement and sand I mixed dry first, then with water. The gravel I mixed wet, with the other mixture, and, when they were thoroughly mixed, I put them into the form.

The standard mixture I made by using 1:2:4. The sand and

cement, after being mixed dry with coloring material, were then mixed with water. Then I put the gravel which I had wetted in, and after mixing them thoroughly I put them into a form. The medium mixture I made by using 1:2½:3; the lean mixture, by using 1:3:6. The sand and cement were first mixed dry, then the color was put in dry. Then they were mixed with water, and the wet gravel was mixed in. After they were mixed thoroughly they were put into the forms.

The neat mixture is used where it has the most to do. The rich mixture is used for columns and high stresses, and where watertightness is wanted. The standard mixture is used for arches, for re-inforcing floor beams, for engine and machine foundations, and for tanks and sewers. The medium mixture is used for piers, thin foundation walls, sidewalks, and sewers with heavy walls. The lean mixture is used for walls, foundations, and for unimportant work.

Cost of Cement, Sand, and Gravel, by Paul Haggerty. Ref., Father and a Workman. Concrete Construction about the Home and on the Farm.

I asked my father and he said that Portland cement costs $1.90 per barrel.

While I was walking along Pelham Road I went into a side street which led to a sand pit, named the Pelham Sand Pit. I asked the workman the price of a load of sand and he said, "$1.50, drawn." Gravel costs the same.

There have been many fires and fire tests that have demonstrated that reinforced concrete will stand a very great heat. This is a valuable thing to all concrete structures.

After concrete has been placed, it must be taken care of very strictly because if it is cold, the concrete will spoil. This is sometimes protected by putting tar paper around the concrete and by using steam pipes running around it.

If there are any electric wires around the concrete, there must be care taken, if the concrete is reinforced, for the electricity will cause the iron or steel to rot away.

Mixing Concrete by Hand, by George Lahn. Ref., Concrete Construction, Art and Industry in Education, 1912.

A flat water-tight platform makes a good base to mix concrete on. Ten feet square is a convenient size, and the boards should be fitted together. They should be planed off on top, so as to make shoveling easier. First a layer of sand is spread upon the platform. Upon this the dry cement is placed. These are then mixed thoroughly, which may be seen by the equal color. Wet stone is then thrown into the mixture and the whole mass is turned over three times. The water is poured in while the mass is being turned.

The Concrete Form, by Robert Merkle and Marion Skillen. Ref., Concrete Pottery and Garden Furniture, Concrete Construction.

Now that I have finished telling you about mixers, I will tell you about the concrete form. One of the chief necessities of good concrete is the concrete form. Some work requires two forms, an outside and an inside one. Green timber is always desirable, and white pine is best. To prevent the concrete from sticking to the form, the inside must be oiled with soap, oils, or crude oil. If a smooth surface is required, the planks should be planed and their edges beveled or grooved. The nails should not be driven all the way home, but have their heads out, to be easily pulled by a hammer. The less hammering the better.

The length of time the forms are to be kept on varies. On small work two or three hours is sufficient, while on large walls two or three days is required.

Where forms are to be used a number of times, metal is usually employed, galvanized iron being the most popular.

As my brother works in the business, I asked him for information about the forms for a concrete foundation. He said that the wood generally used was spruce. The wood used for the walls is $\frac{7}{8}$ in. and $\frac{5}{8}$ in., and 4 in. x 4 in. is used for posts, which are set every 2 ft. apart. You first build one side of the form the required length and height. Then you brace it and plumb to a line. Then you are ready to build the other side. Cut some boards the same length as the width of the desired wall. These boards are to be used as spreaders, at the top and at the bottom of the form. Either bolts

or wire may be used for yoking up the form. At the top of the water table is a triangular-shaped piece of wood to make the chamfer. It is called a 45 degree.

Experiment of Reinforcing Concrete by Ulysses Slateo. Ref., Concrete Construction.

The concrete must be carefully placed in the forms. It should be filled in, in layers from 6 to 12 ins. deep. It should be tapped lightly with a rammer until it flushes to the top. The method of obtaining a smooth face is as follows: Place a spade or thin paddle between the concrete and the form, moving the handle to and fro, up and down. This forces the broken stone in the concrete away and brings a coating of mortar next to the form.

Reinforced concrete is ordinary concrete in which iron or steel rods or wire have been imbedded. Reinforcement is required whenever the concrete is liable to be bent or twisted. It is very brittle unless it is reinforced.

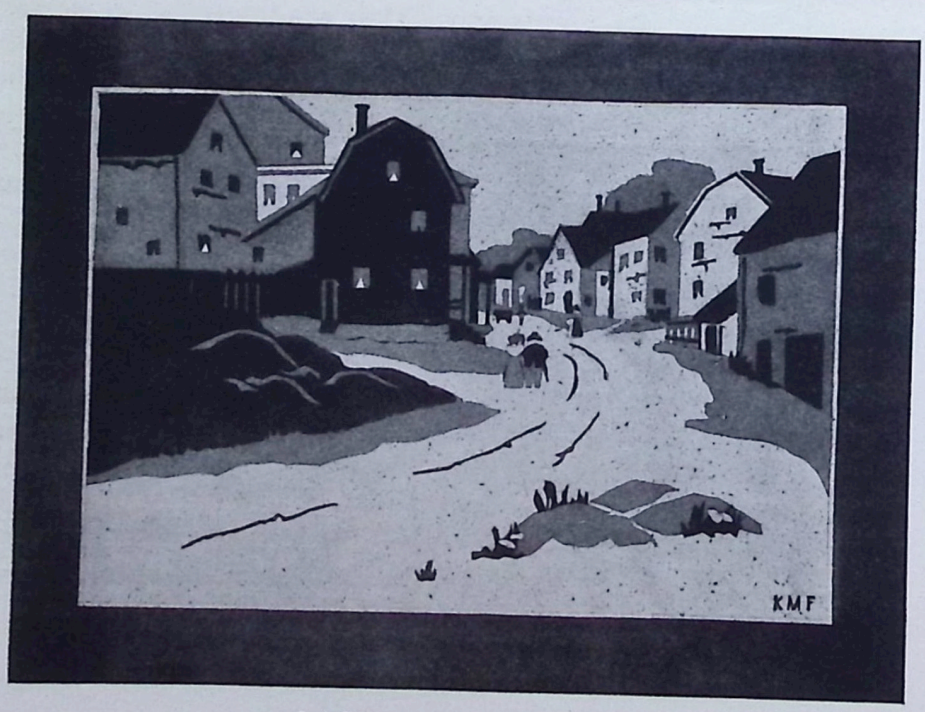
I tried an experiment with a bar of concrete placed across the top of the jaws of my bench vise. Across the jaws, underneath, I placed a piece of steel bar. I then placed a heavy iron clamp across the concrete bar and the bar of steel. I turned the clamp screw until the concrete broke in two. By this I proved that concrete needs to be reinforced where pressure is placed upon it. As the under side of the bar gave way first, it is necessary to place the re-inforcement near the underside when the pressure is above.

Artificial Coloring, by William Emrich. Ref., Popular Mechanics Magazine.

For coloring concrete, the amount of coloring matter should be about 50 per cent as great as that of the concrete. This amount of certain colors such as yellow, which differs little from that of cement, does not produce much of a change. Lampblack is best for darkening, and white cement for lightening. The coloring constituent can be used dry or in a paste, but it is more convenient in mixing to use the dry form.

Some good colors for cement are lampblack, ultramarine blue, burnt umber, yellow ochre, Venetian red, and deep chrome green. These colors are bought at the hardware store.

Tiles and Border, illustrating Tables. Class in Design.



Cut-Paper Compositions.

PAPER-CUTTING

Kate Franklin

MANY people think that art is art only when brush and paint, stone or marble and the sculptor's tools are used to execute it. There are, however, many other mediums which may be used for artistic expression. The medium itself is not so important as is the way in which it is used, and materials, whether simple or complex, are not of so much consequence as are the fine choices and creative thought which give the product art quality. Cut paper, used with an effort for well-chosen color and arrangement, offers many opportunities for experiences in composition and design. Wee kindergarten children use it with the utmost freedom and evolve small bits of art which look quite marvellous to the uninitiated eye.

It has been my experience that many children see things first in mass, and I have found that cut paper serves to show their masses in a large and simple way. They are interested in masses of sky, sea or river, grass or trees, houses or boats, and other objects which enter into their daily lives. Even little children in the poorest districts of the city, after a typical experience has been given them, such as a day in the country, a morning by the sea, a trip around the great city, will come back and express in simple but fine ways, with scissors and paper, their individual experiences. Choices as to light and dark color, size, shape, placing, and arrangement are left to their creative minds. The children, even at this early age, begin to show right feeling for these fundamentals of fine art.

In the kindergarten and lower grades there are many ways of using cut paper. It comes in hundreds of lovely tones and varied textures which suggest possibilities for allover patterns, rhythmic borders, flower designs and quaint landscapes. It is quite inexpensive. Wholesale paper houses and kindergarten supply stores will furnish the means, which, if used by a creative mind and an appreciation of fine things in art, will accomplish good results.

It is often said of this cut paper work that it looks very much like Japanese art. This is probably because of its simplicity and the flat tones of the paper. The masters of Japanese art leave one to fill out the picture with one's own imagination, and so it is with cut paper, especially if the subject happens to be a landscape. The dominating thought is presented and the details are merely suggested.

In starting to make a cut paper composition like the initial letter in the illustration, think first of the shape in which you intend to place it. This time it will be a square. Then choose a color-scheme. It might be a green-blue sky, dark blue-green trees, yellow-green grass, a dull white house with orange-red roof and chimneys and blue-green window shutters. This, with dull yellow for the road and touches of the orange-red for flowers by the road side, darker notes in the tree trunks, and the white of the house repeated in the initial letter would complete the color scheme.

The composition, if simple, may be cut free hand, as little children always do, or, if more complex, it may be first sketched lightly with pencil on the background. It is easier as a rule, to cut the sky or foreground the size of the entire picture and then arrange your shapes on this. Cut the principal masses first, then the subordinate ones, and move them about until the composition is good. This moving about of the cut out shapes is most interesting because so many changes and varied arrangements can be made in a short time. When you have made the best possible grouping, it is time to paste, using a pointed stick for the purpose and a heavy flat-iron to insure a perfectly flat surface.

Besides the work with the children, cut paper may be used in many other ways. It furnishes a splendid means for designing posters, festival cards, transparencies, covers for portfolios, and the like. It is charming when combined with cardboard construction work. Boxes, baskets, desk sets, and other things may be designed with patterns, rhythmic borders, or flower designs.

After experimenting a little with this delightful material we begin to see more of its possibilities, but it is well to remember that the thing which changes its use from a mere activity to an artistic experience, is the intent to create a harmony by means of good shapes, good dark and light, and good color.

Paper cutting Project from Second Grade—Horace Mann School.

DESIGN AND CONSTRUCTION

Edward Thatcher

That there is a special sort of design needed for wood, another for metal, another for textiles, and another for pottery, is coming to be recognized by many teachers of design in schools of industrial art. Fortunate the school that possesses a teacher of design who has actually worked in all the materials whose design he teaches! Only by working in the materials may design suitable for them be understood.

Wood is worked with certain tools, and the grain and texture of it demand attention. Metals may be worked hot or cold, and wrought or cast into moulds. Cloth is woven on a loom capable of reproducing certain designs only, or the plain cloth once woven may be stenciled with colors, printed with a wooden or metal block, embroidered with colored threads, or bits of colored cloth applied to it. Pottery is turned into shape on a wheel, or cast in moulds of plaster. It is only by knowing how these different materials are best worked into the shape desired, so that the design is always a part of the construction that the teacher is adequately equipped to design successfully for them. The wonderful ease in working all materials, which our modern technical life now offers, tempts the worker to force them from their natural tendencies; copper, iron, silver, and gold all show this. Metal is so ductile when annealed that it may be forced into all manner of forms having no meaning in this material, as is only too evident in the grill work and elevator housings of some great hotels. A knob of iron may be formed on the end of a bar or rod and then flattened out on the anvil into a sort of leaf, a flower shape that comes naturally from the hammering. But why should this be filled with veins that rival a natural leaf? Why not leave it as it is, the natural growth of a process and not an imitation of nature, flower of iron not an iron flower? Iron roses, the delight of many a misguided smith who mistakes skill for art, are seen intertwined in trellises of iron, as much metal used in the piece as would serve to support or protect the space enclosed a hundred times. Iron is not a deli-

cate metal. It should not be used to imitate a flower that sways naturally with every breath of air. It is a sturdy metal, bars of which when heated red, bend or flatten out under the hammer in graceful curves possible only to this material. Grill work done by the early Florentine and Spanish smiths are splendid examples of this. But it is only too evident in the designs made for wrought iron nowadays that the designers know little of how to attain beauty at the least cost of material and labor.

Of course, not all who design are able to work in all materials, but nothing should prevent an intelligent study of such work as is carried out. The power of observation needs to be constantly developed by the sight of work done in the shop itself, not on the draughting board only. Great opportunities are passed by in hurrying from one thing to another, when the intent is only on the matter in hand, and the mind absolutely closed to the operations in the shops. It should not be so, and the few students who observe processes are the best students always.

The time has gone by when an accumulation of facts, names, and dates, and an armful of books, may be said to constitute an art education. Experience is demanded, and we cannot obtain that combination of beauty and usefulness without a knowledge of the process and the technical difficulties.

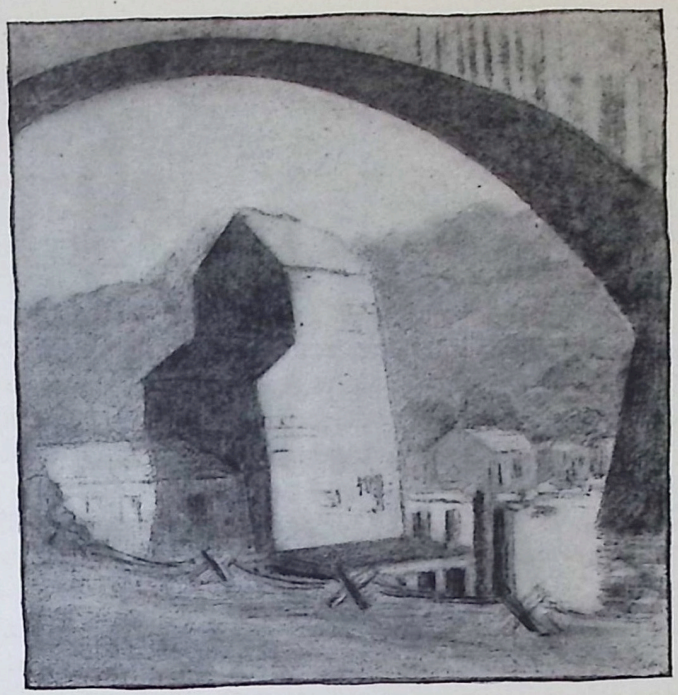
In times not long past, as we still see the results at every hand, design was considered a thing applied after the usefulness of the thing was well established. All manner of pieces of turning and fretwork were glued or screwed on furniture, mere excrescences without use, without purpose. Fortunately nowadays the fact is recognized that these atrocious things add neither comfort or beauty, but that the construction is decoration.

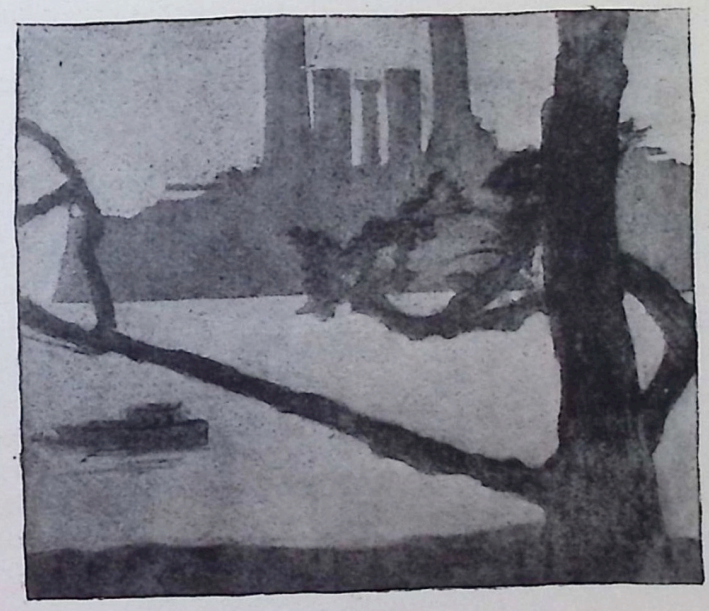
Nowhere is this better illustrated than in the iron work of the new Pennsylvania Station at Thirty-third Street. Here in the train sheds, the roof supports are frankly constructed of iron riveted together so that they form supports of beauty and at the same time of great strength.

The keynote of our rapid modern life has to be simplicity, but

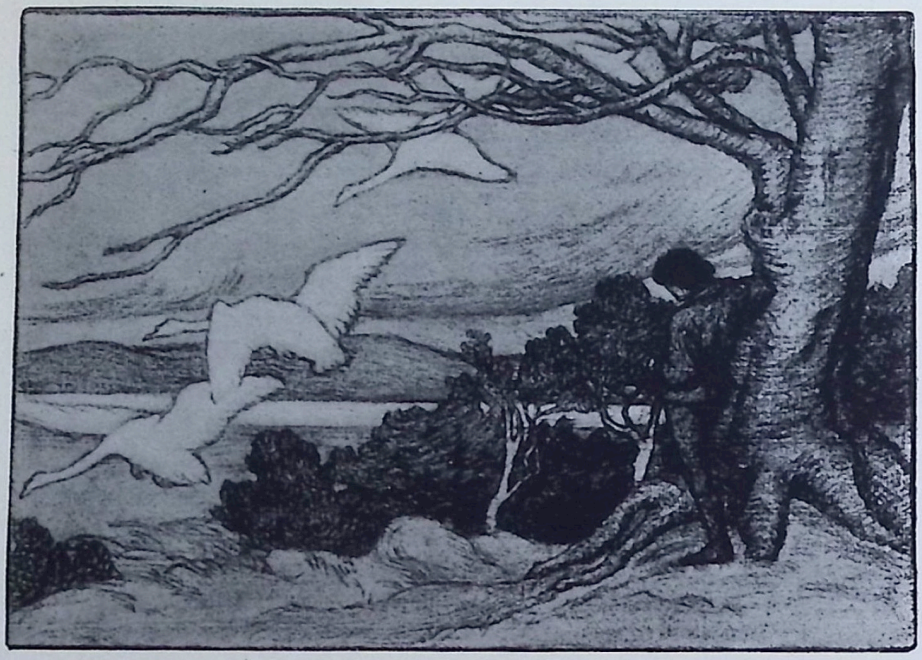
not the simplicity of ugliness so apparent in some of the early mission furniture. Heavily constructed furniture may have been suitable for the old stone buildings of the missions, but in a modern apartment where every foot of space has to count it is entirely out of place. We are building our furniture not of great squared timbers, nor of spindle pieces delicately gilded, but of suitable strength, carefully designed, drawing on the best models of the past and designing new ones to meet our modern conditions. A chair leg need not be square its entire length, but simple turnings may be introduced, taking away the monotonous square solidity much in vogue a few years ago.

Rows of chocolate colored "brownstone fronts" still darken many of the streets of older New York, their windows small, heavily framed, their doorways, steps, and window-ledges packed full of meaningless carvings. Contrast these with the newer apartment buildings of gray brick and white stone, with terra-cotta facings, the windows of large size and the lines of the doorways and the window openings forming an agreeable ensemble, so that years from now we need not be ashamed. Very little applied decoration is on the best of them. This construction beautifully illustrates that construction is the design. The great skyscrapers are well worthy of study in this respect. The dignified lines of the most excellent of them, the Woolworth building, is most worthy of attention. Contrast the lines of strength that form the principal decoration of this building with the fussiness of many of the earlier ones. Students in design and industrial arts must consider their materials that the design may be a part of the thing, not a thing apart. In many of our schools a sort of formula is used, a certain smug fitting together of shapes, each one following the outline of the others. The mentally lazy seek a sort of ready-made formula for design. Wide-awake observation of all materials and a suitable design natural to each is the only receipt. Art appreciation is not a thing of two years or of four, it is of a lifetime.

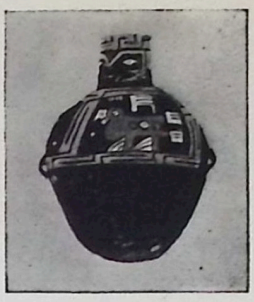




Charcoal Compositions.



Copies and Designs from Museum Motifs.



THE USE OF MUSEUMS IN SCHOOL WORK

Malcolm Huff

New York is rich in museums, generously open to the public, their managers anxious to co-operate with schools in an effort to bring such collections to the use of the people. The collections, representing the art of all peoples, and all ages, are of infinite value to the student. These sources are constantly drawn upon by the students of Teachers College, not merely for the purpose of using their art objects as models, or of memorizing the different periods of historic ornament, so as to proudly boast that they can distinguish and reproduce any building or piece of furniture from early Egyptian to late Victorian, but rather are they used as examples of harmony and fine spacing which may develop judgment and appreciation of these qualities whenever seen. To this is added the hope that when attempting original designs the work of our students may be as simple, spontaneous, and enthusiastic an expression of our time as the work of other ages was of the period in which they were produced.

With this idea in mind the junior class at Teachers College designed a series of bowls and baskets, using the motifs of the primitive peoples. As the work of such peoples is naive and unaffected, qualities valuable to the student, this pottery was chosen as a subject to help develop their recognition of such characteristics and power to express them in their own work. The students made freehand brush and ink studies of the Indian pottery and baskets, keeping in mind the proportion and spacing and the

fact that the design on these was not "applied" but appeared to be a vital part of the basket itself. In the studio these designs were varied in their dark and light and original arrangements made by each student.

Another lesson given was to the production of borders with one of Aesop's Fables as subject. For a preliminary step toward designing these borders, the Coptic and Peruvian textiles, always suggestive in their rhythm, tone and color quality, were studied. Freehand studies were made of these just as had been done with the Indian pottery, in an effort to catch the spirit of these early craftsmen. After this the original borders, with the fable motif, were designed in two and three tones and lastly executed in color.

Another important advantage of the museum is the opportunity it offers for the study of the fine examples of Greek, Gothic and Renaissance sculpture and architecture. In this we have the harmony of the whole, the unity and fine spacing of the parts, and the contrasts in the particulars. All of these qualities must be appreciated by the art student. One way of bringing this about is by means of modeling. Gothic figures from the Rheims and Amiens cathedrals were copied in clay from photographs. These studies were then corrected from the sketches made from the full-sized models now in the museums. These clay studies endeavor to express the proportion, the fine structural line and architectural qualities of the originals, and appreciation of high relief is obtained in this way which would be impossible to gain without the aid of the museums.

Fine spacing and powerful line are not the product of one age but of all ages. The ability to recognize, value, and compose these should be the aim of all art students. One lesson given to the elementary class, as a step toward the realization of this was the problem of designing a piece of furniture with curved lines. The class visited the museum and made pencil sketches of Gothic and Greek sculpture and Colonial furniture with special attention to the proportion, dignity and grace of line. From these sketches reinforced by the appreciation gained by working from the original,

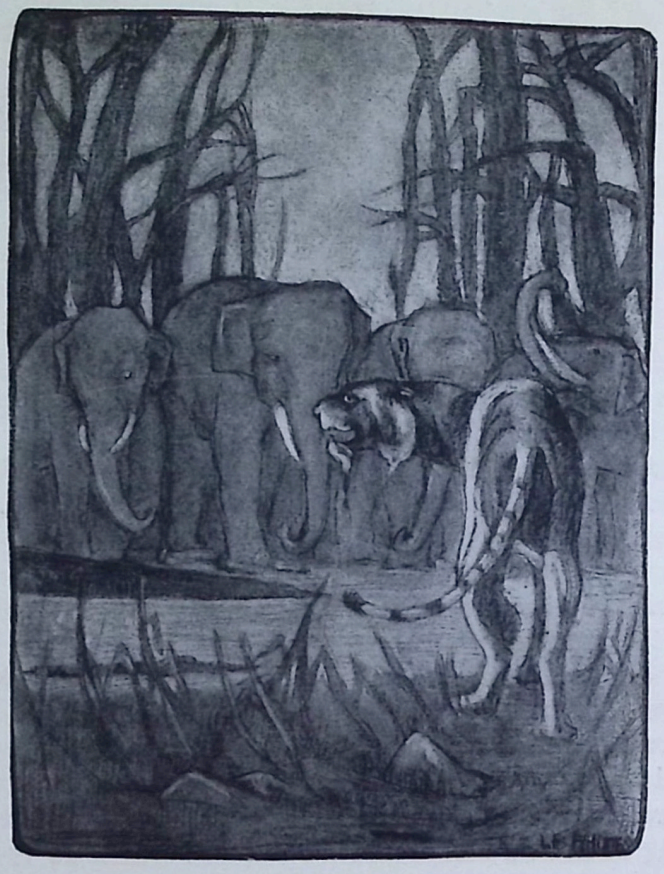
were evolved the students' original designs. Another practical application, for exercising the knowledge of the composition of curves, was in the designing of vase forms in the pottery classes. Designing alphabets and initial letters was another use of the curved line. In this work the Metropolitan and Hispanic Museums and the Avery Library were often visited for the purpose of examining their wonderful old manuscripts. The collection of Spanish books is especially good in color and freedom of handling and is a source of stimulus to any one who aspires to do fine lettering.

Appreciation of tone quality, as well as of fine line is necessary. As the old Spanish, Persian, and Italian brocades are excellent examples of this, studies were made from these, first freehand, and later varied in two and three tones and color.

Attractive tone compositions were developed by the senior class from sketches of animals and birds made at the Natural History Museum. Numerous careful pencil sketches were made from the animal selected and from all of these, the large composition was developed in the studio. This work is a valuable preliminary exercise to sketching from life.

The Japanese brush is recognized as one of the most facile and convenient tools for free expression. As an exercise in the use of the brush, as well as to gain appreciation of the fineness of the dark and light pattern, Mexican pottery was copied. To keep the brush stroke as direct and the pattern as vigorous as the original required power and clear, direct thinking, which is, after all, the important point to gain, regardless of the source of inspiration.

Thousands of experiments might be carried out from the suggestions found in the museums. But the few lessons here described illustrate how the students gained experience in studying the best examples of design from the originals, in making varied arrangements and finally in working out their own ideas. In this way they developed their individuality, invention, and imagination, and, by comparing their work with the originals, gained a better sense of art values and a good historic perspective.



Composition and border from museum sketches.

COSTUME DESIGN IN THE SEVENTH AND EIGHTH GRADES OF SPEYER SCHOOL

Theodora F. Demorest

From time immemorial one of the most interesting questions of femininity has been how to appear most attractive. Thought and study form the basis for the decisions on most of the questions of to-day. Why not apply the same methods when dealing with the question of dress? How few really well-dressed people one sees! Not that they do not spend time and thought on the subject, but because they do not know what to select for their particular needs and adornment.

The aim of the course in Costume Design at Speyer School was to teach the girls how to choose that which best suited them. The course was prefaced by three talks on general hygiene, clothing and textiles.

The lessons were based on the following outlines:

1. Suitability to;—
   - A. Wearer.
   - B. Occasion.
2. Durability.
   - A. Utility.
   - B. Style.
3. Cost.

The first problem was the designing of a coat. In the first lesson the coat was taken up as a design in line. In their art work the children had learned the principles of design, subordination, rhythm and repetition. The coat outline or silhoutte was the space to be filled. The collar, cuffs, belt and trimmings were to form the design within it. Vertical lines, such as stripes, carry the eye up and down giving the impression of height. Horizontal lines, as a belt and cuffs, carry the eye across the figure, giving the impression of breadth. In designing a costume, these principles must be taken into consideration.

Three large models of coats, drawn in charcoal, were criticised. Suggestions and changes were made by the children by erasing and re-drawing the lines. The children applied their knowledge by designing coats for themselves, each tracing the silhouette of a coat, from a fashion book, on Japanese paper, and modifying it in three different ways suitable for themselves.

The second lesson dealt with the coat as a dark and light problem. A good design must have balance of dark and light masses. From the standpoint of utility a dark coat is best, the trimming giving the opportunity for contrast. Since these coats are for ordinary use the best plan is to have the trimming a medium tone. The three large models modified in lesson 1 were worked out in variations of dark and light. The class criticised these on the basis of suitability, durability, and utility. On the line drawings made in the last lesson different combinations of dark and light were made by the class applying these principles.

The second problem, designing a school dress, covered the next two lessons. Simplicity is one key-note to good design in clothes. Anyone can buy things in the latest fashion, but the really well-dressed people are those who choose costumes that suit themselves. On this basis three models of dresses were criticised.

Since the children were not experienced in figure drawing a stencil was cut from the outline of the models. A tracing of this was made for each girl. The class problem was to make a good design of a dress suitable for each individual. The class were

given opportunity to express their ideas by criticising the designs that were made.

Lesson 4 took up the school dress as a color problem. The color theory of hue or color; value or dark and light; intensity or brightness, greyness; and the harmonious combinations of these were known by the class through former Art lessons. The suitability of color to the individual with regard to hair, eyes and skin was discussed. The hair-ribbon is just as much a part of the costume as anything else and it should emphasize or harmonize with the color scheme.

They criticised three large models, made from the stencil, worked out in color, illustrating differences of Hue, Value, and Intensity.

These ideas were applied by the class in selecting materials of which they wanted to make their dresses. The study of textiles in their Domestic Art lessons helped them in judgment and selection. These materials were represented with water-colors on the line drawings made in the last lesson.

The designing of a hat to be worn with the coat and the dress was the third problem. Since the hat is a covering for the head, it should suggest the lines of the head. It could be large or small depending on its suitability to the wearer and to the occasion. Tall thin people look best in broad flat hats because the lines of it carry the eyes across the figure giving the effects of breadth, while people that are inclined to be stout look best in hats that carry the eyes up and down. Hence the silhouette of a figure or its line effect can be changed and developed by the style and place of the trimming. The color of the costume can be "echoed" in the hat or a neutral color or black might be used for harmony or accent.

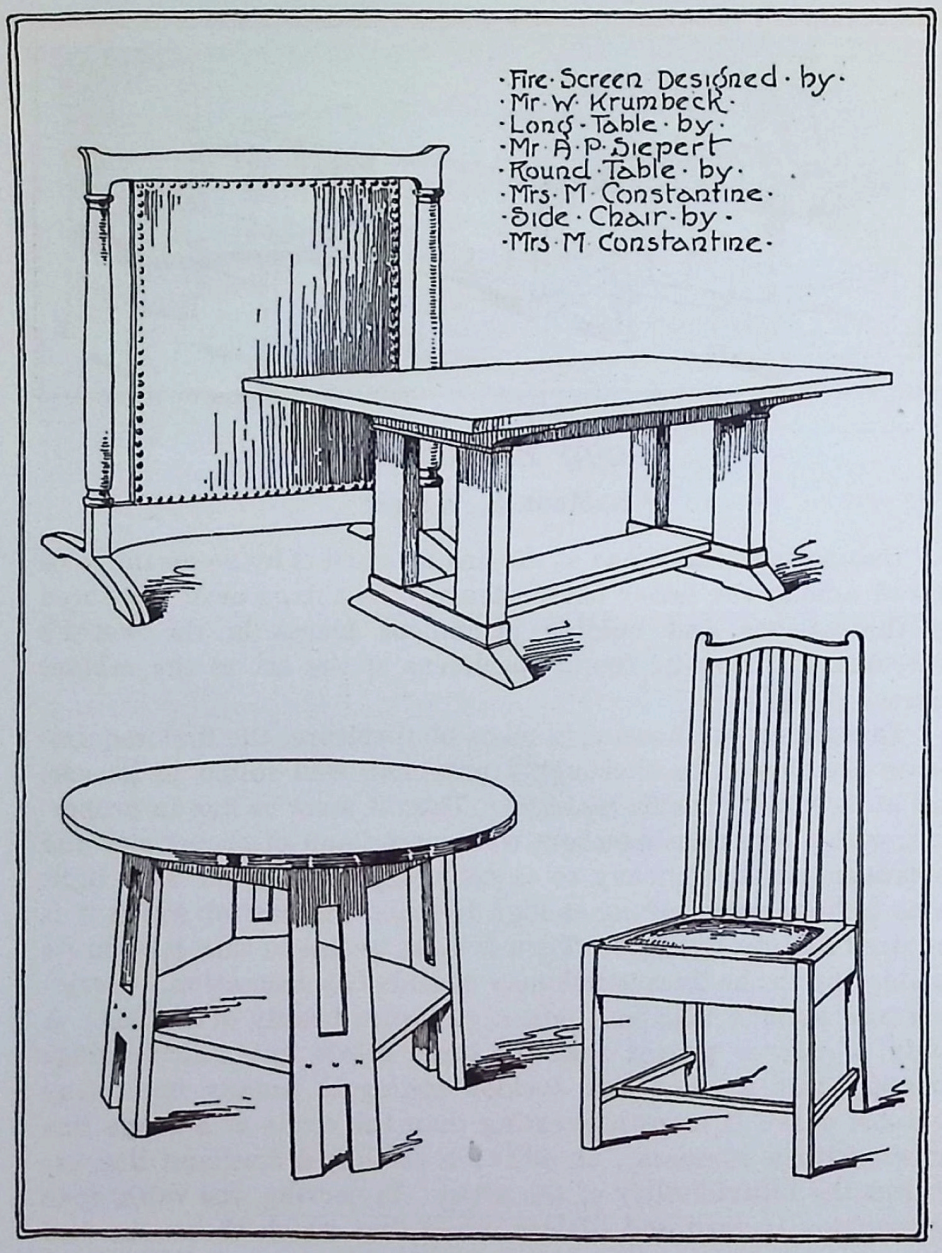
The Model Hats, as in the case of the dresses, were criticised. Six different stencils of hats were made to fit the heads of the figures just designed. The children chose the shape they thought best suited themselves. They then modified and trimmed this so that it would be harmonious with both the coat and the dress. The

costumes were finished by using crayon pencils for the outlines and shading.

The last problem was the party dress. In the first lesson the aim, to look as girlish as possible, was emphasized by simple white dresses with a touch of color on sash or belt; or dresses of a dainty flowered material. These are most becoming and appropriate party dresses for girls. They wisely decided to leave chiffons and satins for older people.

The hair must be considered as an important part of the costume; it should be dressed simply with no ornament save a dainty hair ribbon. Another important part of the costume are the shoes and stockings. White and patent-leather shoes were decided against from the standpoint of usefulness and wearing qualities. The dull black shoes were almost unanimously chosen for use for all occasions.

Tiles made in Modeling Class.


·Fire·Screen Designed·by·
·Mr·W·Krumbeck·
·Long·Table·by·
·Mr A·P·Siepert
·Round·Table·by·
·Mrs·M·Constantine·
·Side·Chair·by·
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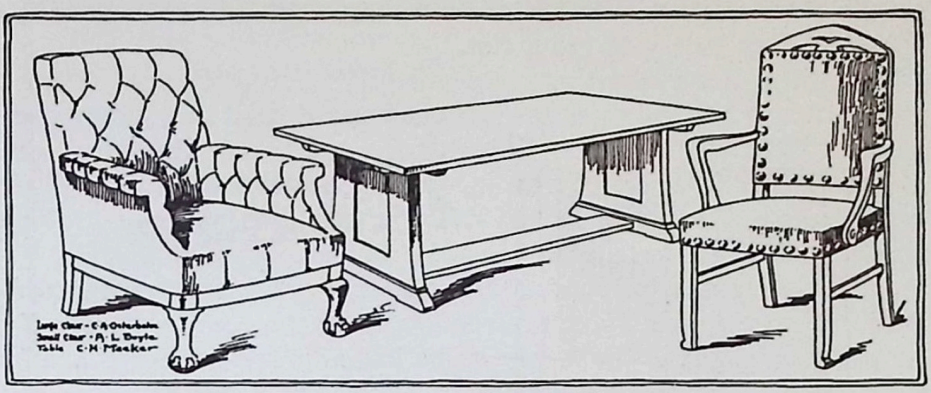


GOOD FURNITURE

LaMont A. Warner

Cabinet making is one of the fine arts and is by no means to be placed among the lesser ones. Among the things most treasured by the nations and holding prominent places in the world's museums will ever be found specimens of the art of the cabinet maker.

In making or choosing a piece of furniture, the first requirements are that it be thoroughly practical, well suited to its use, and of suitable, durable material. Then it must be fine in proportion, with its various members well spaced and of proper size and thickness; not over heavy so as to be immovable, nor over light so as to be fragile; strong enough to stand the use for which it is required and no stronger. Then it must be fine in line, both in its outline and in the lines which may be added as decoration. Cleverness and artistic skill are needed to insure beauty of outline. A study of curves proves that the long, subtle line which swings abruptly into a short and decided ending is usually fine. Any variable curve is more interesting than the circle or a shape line drawn with a compass. In addition to this, a freehand line expresses the individuality of the artist. In carving, the work done by machine is dead and lifeless, while that which shows the tool

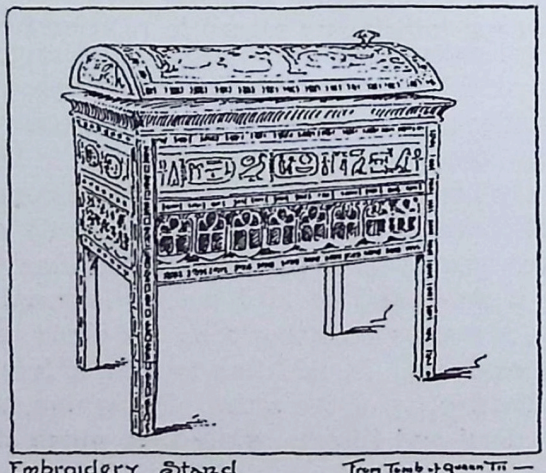
marks of the carver, with their slight irregularities, is always alive with the personality of the artist.

A piece of furniture must be good in value, both in itself and in relation to its surroundings, not too dark if used in a light room, nor too light when used in a dark room. The middle values are always best. The use of natural colored leather on a very dark oak piece is also poor, as the value contrast is too great. Use similar values to make a harmonious scheme.

The color of a piece also depends somewhat on its surroundings. It may match the other wood-work in the room or it may be in contrast. If it is the latter, to be harmonious it should not be too strong in color, and should be about the same value as the wood-work.

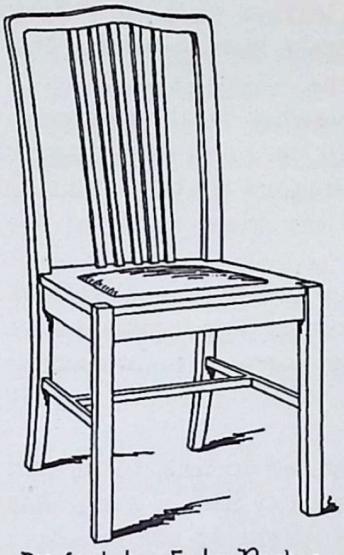
The prized furniture of other days is often not the furniture which suits our day. Living conditions have changed, perhaps we are living more simply than those in former times; if so, our furniture will express that simplicity in which we are honestly trying to live.

The Georgian period in England expressed in line, form, and color the simplicity of a people whose national ideals were akin to ours of to-day. Therefore, we may quite properly use or adapt their vigorous but simple styles of furniture in our present homes.



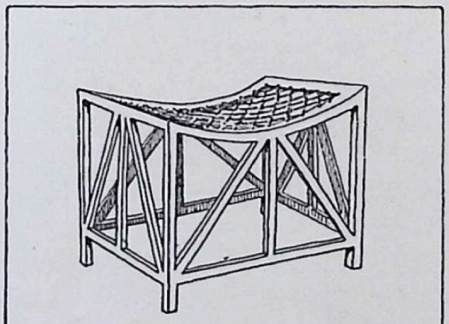
Embroidery Stand From Tomb of Queen Tii

The ideal way to start in designing a piece of furniture is to consider carefully the requirements of the piece: how high, how wide, and how deep it needs to be in each of its parts in order to be best suited to its use. Then decide its forms, the weight of materials, and the joints needed for strength. When this is done, if you have not been hampered by convention, it may result in something unusual and individual. Then study to make its spacing excellent, and last of all work out the refinements of curved outline, carving, or inlay; it may be much better if these last are not added at all.



Designed by Evalyn Norton.

The accompanying drawings are all, excepting two, original designs from the work of students in the furniture-design class at Teachers College, and have been specially drawn for this article. The first one is from an Egyptian queen's sewing cabinet, three thousand years old. It is a masterpiece in space division. Each line and moulding has been judiciously placed in relation to all the others,



EGYPTIAN STOOL

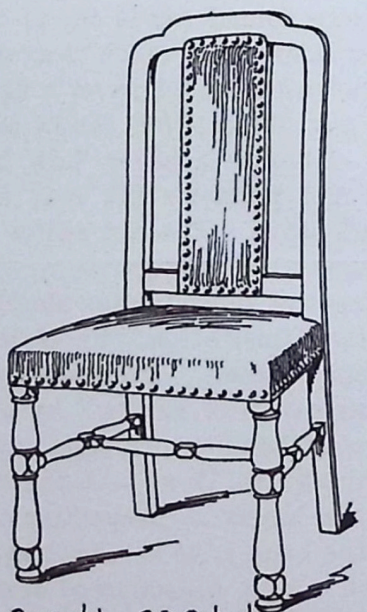
Sketched from the original in The Royal Museum -- Brussels

but its greatest charm lies in the rhythmic repetition in the painted or inlaid decoration.

The chair designs are practical pieces in simple lines. Fine proportions, good spacing and refined relations in the thickness of the various parts go to make a series of original and most satisfactory chairs.

The tables are also unusual and charming, full of originality and in all ways desirable. The fire screen has unusual refinement of line and subtlety of curve. The last drawing is an Egyptian stool sketched from the original in the Royal Museum in Brussels, its extreme simplicity of construction and beauty of form are its commendations.

All of these pieces are so unpretentious in design and so simple in motif that they might be used in almost any room, no matter what style the other furnishings happened to be. The only requirement would be that the color of the wood and upholstery be in harmony with the other furnishings.



THE HIGH SCHOOL ANNUAL AS A PROBLEM IN ART.

Doris Patty Rosenthal.

THE high school teacher is sooner or later confronted with the problem, the school publication. To what extent should the art instructor be interested in the magazine? Should she not plan as carefully as does the English department, which criticizes and organizes all the literary efforts? The book goes forth into the community indicative of the activities of the school. How some art teachers can still look the world in the face after the issuance of some of these magazines is as puzzling a question as was the riddle of the Sphinx. The magazine is primarily the students' activity, but a tactful teacher can co-operate with, but should not dominate the students. I believe a great deal of interest could be created, hand in hand with good work, if the art teacher would consider the problem of the school publication an integral part of her term's work.

The first factor to be considered is one of capital and expense. The business manager knows how much is available for the cause. When that is compared with the engraver's figures, it can be estimated how many full page decorations can be used, how many head and tail pieces, how elaborate a cover, how beautiful in texture and color the paper and printer's ink may be, and whether or not there may be end pages. The art editor will decide on the subjects of the full pages and headings.

The books that treat of reproduction should be read. Among the best are "Decorative Illustration," by Walter Crane; "Modern Illustration," by Joseph Pennell; "Practical Designing," by Gleason White; "The Illustration of Books," by Joseph Pennell, and the chapters that treat of book covers, title pages and lettering in "Composition," by Arthur W. Dow. All the work for this reproduction should be made larger in proportion than the completed product. Primarily the book is to be ornamented, not illustrated. It should be more than a mere collection of accidental, weak-lined, cross-hatched sketches. The book should have unity, and should

be simple, beautiful, and harmonious throughout. The naive decorations of the children are to be preferred to attempted professionalism.

The cover is a problem in rectangular arrangement divided into beautiful proportions, and should indicate the nature of the publication. The lettering which is an important part of the design, should be simple, straightforward, and legible. The pupils should make two designs, one in black and white, the other in color. Good reference books on lettering are "Alphabets" by Strange, Browne's "Book on lettering" and Johnston's "Writing, Illuminating and Lettering." There are also examples in the 1912 issue of "Art and Industry in Education" for book covers designed by students of Teachers College.

The end pages, or lining of the book, are often covered with a design of a small repeating pattern in one or more colors, using wood block or carbon paper method. This may suggest the character of the book, but it should not compete with the decorations proper. "It is a fore-court, a grass plot before the door. One does not know the whole secret of the book until one is stopped at the double doors of the full title. Even here the whole secret of the book should not be out, but rather played with in a symbolic way."

The arrangement of the photographs of the class and faculty is a vital one. Clearness of perception is of primary importance, and to gain this, all cuts should be vertically placed, not tipped to the center as if the heads were being knocked together. It is also necessary to separate the dark and light photographs into groups. Then, too, there should not be too much contrast between the background and tone of the cut. If there is to be any decoration, it must be simple and unobtrusive. This is an excellent problem in subordination.

The spacing of the printing on the page, that is, the relation of the margin to the gray matter of printing and the relation of the capital letter to the page as a whole are very interesting projects. It is well to carry out the same character treatment and size of lettering throughout the book, especially with the ornamented initials.

This would still leave plenty of room for variety and invention in the details.

Then there is the question of full page decorations suggested by the art editor for such subjects as Faculty, Senior Class, Society, Literary, Athletics and Jokes. Here must be considered the use of wash, charcoal, or clay designs which means halftones with the expensive copper cut, or pen, brush and ink decorations with the zinc plate. The idea is one of space filling, of a pattern of dark and light, not of mere illustration. It should be treated in a broad, simple, dignified way. I think it well to have a blank page before the design.

In the headings, even if limited to pen and ink, there should be at least three tones. There are a number of ways of gaining an intermediate tone. In all work, every line should tell, every line should be strong enough, so that if it were left out its loss would be felt. Printers hate cross-hatching and thin, bow-legged lines crawling over one another. It may be well to carry the heading clear across two pages, giving the effect of a frieze. The relation of the size of the heading to the printing on the page, and to the initial letter must be considered carefully.

"Then we come to the space at the end of the book, the tail piece. The blank, the silence seems too dead; one would be glad of some lingering echo, and here is the opportunity. It is a tight place, like the person expected to say the exactly fit thing at the right moment, neither too much nor too little. It should correspond to the style of the rest of the decorations in the book. There is what I should call the mouse-tail termination, formed on a gradual diminishing line, starting the width of the type, and ending in a point. Then there is the plan of boldly shutting the gate by carrying a panel of design right across, or of filling the whole remaining page. Or there is the inverted triangular plan, the garland sprig, leaf, or pen flourish glorified into an arabesque. One principle in designing isolated ornaments is useful; arrange the subject so that its edges shall touch a graceful enclosing shape."

EXPERIMENTAL WORK IN INDUSTRIAL ARTS AS A MEANS OF EFFICIENCY

Alanson H. Edgerton

The progressive teacher who undertakes to make the woodworking shop more typical of real industrial conditions, by giving the boy enough freedom so that he may find out the "How" and the "Why" of the things he sees in everyday life, is confronted by no small problem. If the teacher is fortunate enough to have the opportunity of organizing his own courses, he will have many factors to consider from the very beginning. As the success of the work, to a large extent, depends upon the child's immediate interest, it should be chosen to that end and presented in such a manner that it will appeal to him as being worth while. On the other hand, the experienced teacher well knows that there are many pitfalls in the path of the beginner. It is first essential for him to master certain processes and difficulties before he is allowed much choice in his undertakings.

When the work has been selected and organized to meet these general difficulties, the teacher has accomplished much, in that he is prepared to start his classes, yet he still has a special problem before him. One of the large problems is to avoid the misrepresentation of industrial conditions as they actually exist outside of the school. It is not enough that the workshop should merely increase the difficulty of the projects, so that the boy may master the principles of procedure and the correct uses of the tools. These are important, but he must also be made to realize that in the industries, it is not only necessary to do a good piece of work, but that it must be made in a short time and with little waste in materials. Until the boy is given an insight into the productive side of industry, and can really appreciate that unnecessary slowness and excessive waste are considered as losing factors in our modern industries, he is not working under actual industrial conditions.

In most of our upper grade curricula, the time allowed for information and shop practice is limited to one and one-half hours of

each week. Owing to this fact, many of our teachers are satisfied to teach shop practice only. Others are aiming to make the boy an intelligent, thoughtful worker, rather than a mere follower of directions, regardless of the time element. If the teacher of the latter type is to gain the greatest degree of efficiency under our present system of education, more successful experiments must be contributed along the lines of economy of time and economy in method.

Feeling that there had always been an unnecessary loss in time whenever a new process, such as block-planing, boring, or chiseling was introduced in our wood-working classes, I began experimenting with the hope of finding some way by which we might get more satisfactory results at the very beginning. Previous to this time, we had always demonstrated in the usual way, explaining and actually making the piece of work before the class. Correctness in the using of the tools was thus given especial emphasis, and the difficulties that would arise from their improper usage were also explained. This method had little effect and seemingly resulted in the boys trying out my caution to see if the undesirable would actually happen. We therefore felt the need of a method which would help the boys in using their limited time to a better advantage.

Judging from these results, it seemed that the greatest weakness in our method of demonstrating was due to the fact that the piece was made before the class, giving them a vivid image of the results when the tools were properly used, but, on the other hand, merely words had been used to explain the difficulties arising from their incorrect usage. It was quite evident that a vivid mental picture of these difficulties was lacking, since many of the processes were proving as stumbling blocks for a large part of each class.

As we were reorganizing the shop work in the upper grades, an opportunity was offered to try out these inferences upon boys who were beginning in woodwork. When the boys came to the shop for their first lesson, we talked over the tie rack, which had been chosen for them, and decided that each boy had a particular use for one. The boys also agreed that they needed a drawing to work

from, so each one made a sketch, including all of the dimensions necessary. The importance of measuring and squaring lines was then demonstrated to the boys, after which they marked out their work on the pieces of wood furnished them.

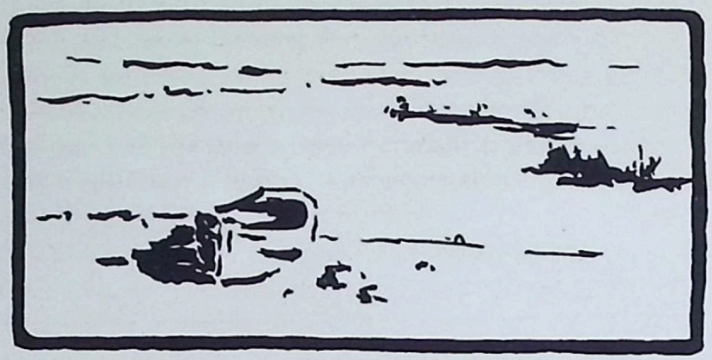
The next time the boys reported, they were ready to start planing their pieces, so after giving them a general idea of the smoothing plane, I showed them the correct use of it in planing the edges of their pieces. Before starting them on the block in planing of the ends, I divided the class into two groups, each group being composed of boys of equal ability, as nearly as I could judge. To the seven boys in the first group, I demonstrated the process of block planing in the usual way, showing them the correct use of the blockplane and explaining that if they did not plane from either edge of the piece, as I had done, the grain would be split off on the other edge. In demonstrating to the other seven, I not only showed them the proper way to blockplane, but also planed across the end in the improper manner, splitting and spoiling the piece which I had taken particular care to finish well. It was quite evident by the expressions on the boys' faces, that the later part of this demonstration had had the desired effect.

In comparing the pieces of each group, it was very noticeable that the group of boys who had the undesirable demonstrated to them, did more accurate block planing than the other group. Four of the seven boys in the first group had split their pieces in planing them, while only one of the second group had split his. The second group also occupied much less time in making their pieces. I kept an account of the time which each spent upon his piece. The seven boys in the first group made their respective pieces in 868 minutes, while the other group completed theirs in 679 minutes. This made an average difference of 27 minutes for each boy.

The outcome of this experiment was so satisfactory, I performed a similar one with another class, in which boring and chiseling were being introduced. Each group was made up of eight boys. As before, the first group was shown the correct uses of the tools in boring and chiseling; while the second group again observed the

extreme effects, resulting from the improper use of the tools. In demonstrating their incorrect usage to the second group, I bored and chiseled straight through the respective pieces, again splitting the wood badly on the opposite side. The results were much the same as the previous experiment, excepting the difference between the groups was naturally not so evident, since neither of these operations is as difficult as the blockplaning.

Since each experiment was performed with groups of boys having practically the same ability, I conclude that the boy, who had the undesirable results of using tools demonstrated to him, was given a vivid mental picture which never once left him until his work was finished. The boy, who had the matter explained to him verbally, lacked that same vivid image and consequently made no special effort to overcome those particular difficulties in his work. In summarizing the results of these experiments I might well use the words of Dr. Thorndike from his "Principles of Teaching," where he states, "Words and figures lack the vividness and emphasis of pictures, models, and other material construction. They do not so easily stir the emotions or so strongly reinforce the original experience of the object."



DECORATIONS IN A RESTAURANT

Josephine W. Barnard

A few years ago the lower dining hall of Statler's Cafe, in the Ellicott Square Building, Buffalo, was redecorated. The upstairs dining room of the restaurant was elaborate and ornate, in keeping with the higher prices on its menu. After careful study of a German exhibit at the St. Louis Exposition, it was decided to decorate the lower room, at a considerable expense, for the benefit of the more humble patrons.

An architect seeing some of my work soon after I had studied a course in art structure, asked that I make the landscape pictures for mural decorations in this restaurant. It was a pleasure to one who had been awakened to an appreciation by an art training that led to desire for fine form, harmonious tone and color, in all that surrounds life, to have an opportunity to extend these principles in a simple way to others.

I painted all the decorations in oil color in very flat tones on canvasses. When the wall was prepared they were cut from the stretchers and cemented into sunken spaces. The surrounding woodwork formed pleasing frames. The subjects were chosen from pencil sketches or photographs. For each picture I made in horizontal rectangles, four inches by six and one-half inches, several compositions of the same subject in outline only, then chose

the one finest in its divisions of spaces. Next, by placing a thin paper over this drawing, a number of dark and light arrangements in several values were studied, using washes of ink only. Again making a choice of the one strongest in its massing, I put that into color. For some, from a Japanese print, I substituted colors of the same value as the different masses, and for others, harmonious color schemes from varied sources. Thus I had small plans ready to be enlarged.

Over each of the sixteen serving tables was placed a low-toned landscape, the color in keeping with the soft, warm, gray marble and woodwork of the room. These pictures all measured thirty-two by nineteen inches. They were painted with no experience as a landscape artist, but were developed merely as designs that might awaken a memory or bring a pleasing thought to the mind of the beholder.

In subject they carried one far away from the noise and turmoil of the life beyond the doors, the crowded street and the people, for no human being appeared upon the canvases. It was pleasing to the designer that the country people, in town for a day's shopping, chose this place for the noonday meal because they "liked the new pictures on the wall." Summer and winter, spring and fall, night and day, transposed into line and tone harmonies, formed the motifs of the various pictures.

Over the fireplace was one canvas measuring six feet in length. This was called "Early Morning." It was a row of tall poplars and their rhythmical trunks threw long shadows across a slightly sloping hill. At the other end of the room, over two doorways were more long panels, merely an arrangement of mandrake leaves on a background of gold, that notes of color might fill a given space.

Many of the problems already created by the students of Teachers College in their study could serve the same purpose. Later on older pupils could produce a similar work that might adorn the rest room of the school house or decorate the chimney piece of country homes, expressing by simplicity of treatment, refinement, beauty and good taste.

THE DEVELOPMENT OF PERSONALITY IN HOUSE DECORATION

C. A. Osterholm

Within the last twenty years, people have become more critical and more exacting in the furnishing of their houses. Formerly the most commonplace interior, furnished with whitened ceilings, cheap wood graining or painting, and wall paper usually bad in design and color, satisfied an undiscriminating taste. The study of surroundings was not as general then as it is now, and the personality of the people was reflected in their houses.

With the acquisition of artistic knowledge and more general culture, popular taste has improved. To a certain extent everyone has taste, but the artistic sense naturally varies with the personality and circumstances of each individual.

To express this beautifully is the art of the decorator. In this personality of the owner lies the individuality of the home. Yet, the consideration of this individuality imposes awkward conditions upon the deocrator. It is his object to create certain artistic arrangements, but he is at the same time constantly bound by the uncertain tastes and ideals of his clients. Often he has to handle unsightly pieces of furniture and reconcile opposing colors. In every room he will find different objects which have been purchased on the impulse of the moment, because they were individually attractive, but which are quite at variance with each other. The decorator has to consider, assort, and reconcile all these and try to unite them in one harmonious whole. It would be unwise for him to insist on one particular period, or suggest too freely his own opinion. It should be his duty to make the interior as artistic as possible under the circumstances, to educate by example. Frequently we find that the successful decorator is not the one who is original, but rather the one who can make the ordinary things good. His work should come from his heart, a desire to serve and to beautify. Rules of taste must exist, but how can the heart give forth its utterance, if the decorator be reduced to specific rules and theories?

A sincere decorator will bring out the personality of his client in a truly beautiful way. The client will in turn be guided by his surroundings to a better appreciation of the decorator's art. Thus, the next time the decorator is called he should find his work comparatively easy, and be able to approximate his ideal more closely.

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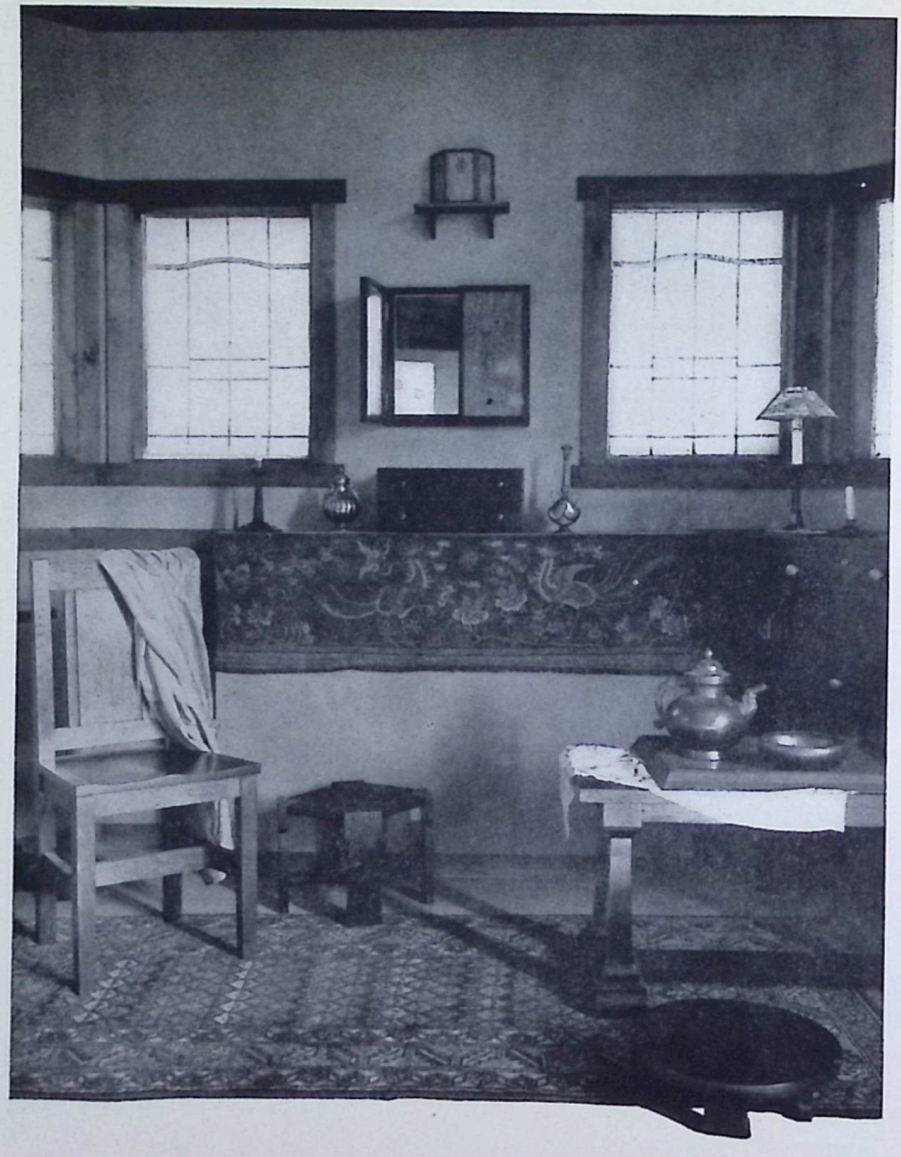

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